Wynn Resort in Everett

Everett, Massachusetts

Second Supplemental Final Environmental Impact Report

EOEEA #15060

July 15, 2015

submitted to **Executive Office of Energy and Environmental Affairs**

submitted by **Wynn MA, LLC**

prepared by **Fort Point Associates, Inc.**

in association with **Dirigo Group**
Wynn Design & Development, LLC
Lifescapes International, Inc.
RD Vanasse & Associates Inc.
GZA GeoEnvironmental, Inc.
Howard/Stein-Hudson Associates, Inc.
Tech Environmental

WYNN RESORTS

Fort Point Associates, Inc.
Urban Planning Environmental Consulting Project Permitting

Fort Point Associates, Inc.
Urban Planning Environmental Consulting Project Permitting

July 15, 2015

Re: Wynn Resort in Everett
Second Supplemental Final Environmental Impact Report
EEA# 15060

Dear Reviewer:

We are pleased to submit the Second Supplemental Final Environmental Impact Report (SSFEIR) for Wynn Resort in Everett (the "Project") on behalf of Wynn MA, LLC. This document has been prepared to describe the proposed three million square foot hotel/resort and gaming facility to be located at 1 Horizon Way in Everett, Massachusetts.

The SSFEIR describes certain elements of the project in great detail, including potential environmental impacts and proposed mitigation measures to be provided in response to the Certificate of the Secretary of Energy and Environmental Affairs on the Supplemental Final Environmental Impact Report, which was issued on April 3, 2015. The SSFEIR also describes the benefits that the Project will bring to the City of Everett, the region and the Commonwealth of Massachusetts.

Comments regarding this document should be directed no later than August 21, 2015 to:

Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/ MEPA Reviewer
100 Cambridge Street, Suite 900
Boston, MA 02114

Printed copies of this SSFEIR are available at local libraries, and copies may be obtained from Fort Point Associates at the address listed below, or by contacting me at: jkohn@fpa-inc.com.

Sincerely,

Judith T. Kohn, RLA
Vice President
Fort Point Associates, Inc.

Cc. Jacqui Krum, Wynn MA, LLC
encl. Wynn Everett SSFEIR

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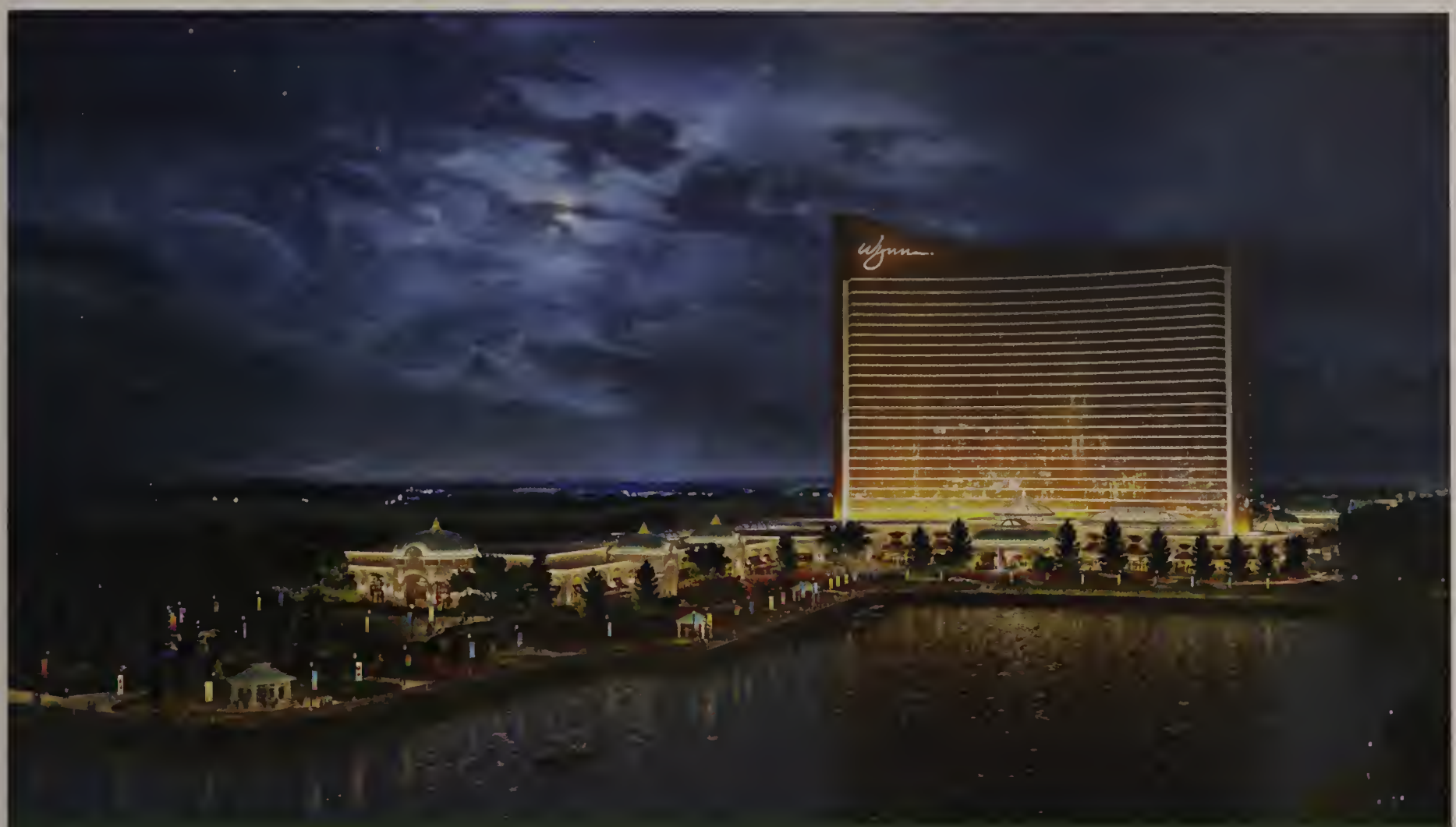

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Everett, Massachusetts

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REF
333.714
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Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

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Chapter 1

Project Summary and MBTA Land Transfer

CHAPTER 1: PROJECT SUMMARY AND MBTA LAND TRANSFER

1.1 PROJECT IDENTIFICATION

Project Name: Wynn Resort in Everett

Proponent: Wynn MA, LLC

Address/Location: One Horizon Way, Everett, Massachusetts

1.2 PROJECT SUMMARY

The Wynn Resort in Everett (the "Project") is a luxury resort involving an investment of at least $1.6 billion to transform a blighted section of the City of Everett, Massachusetts, adjacent to the Mystic River, into a world-class destination. The Project will contribute hundreds of millions of dollars, including tens of millions of dollars for infrastructure, to the City of Everett, the region, and the Commonwealth of Massachusetts. The Project will be constructed on the contaminated site of a former chemical manufacturing plant totaling approximately 33.9 acres (the "Project Site"), and will include a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, a parking garage, and other complementary amenities as described herein. The Project will also include extensive landscape and open space amenities including a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities reconnecting the City of Everett to the Mystic River and Boston Harbor for the first time in generations. See Figures 1-1, 1-2 and 1-3.

The Project will also include off-site improvements including extensive transportation improvements and a multiuse path from the Project's harborwalk to the existing paths at the Massachusetts Department of Conservation and Recreation ("DCR") Gateway Park. The Project will be developed in a single phase as soon as necessary approvals are received.

The Project will anchor and support the Everett Lower Broadway Master Plan (the "LBD Plan") as well as the Everett Central Waterfront Municipal Harbor Plan (the "Everett MHP"), approved by the Secretary of Energy and Environmental Affairs (the "Secretary") on February 10, 2014, by stimulating development of the underutilized Mystic River waterfront, including the Project Site.

As demonstrated in the Project's Final Environmental Impact Report filed on June 30, 2014 (the "FEIR"), in the Supplemental Final Environmental Impact Report filed on February 17,

2015 (the "SFEIR"), and this Second Supplemental Final Environmental Impact Report (this "SSFEIR"), the Project also serves the broader interests of the Commonwealth in revitalizing its Gateway Cities, creating permanent well-paying jobs, increasing waterfront access, cleaning up contaminated Brownfields, creating meaningful urban open spaces, improving transportation networks including for cyclists and pedestrians, improving stormwater runoff, reducing greenhouse gas emissions, and conserving water and energy.

The Project is already the subject of a comprehensive FEIR that resulted in the issuance of the Secretary's Certificate on the Final Environmental Impact Report dated August 15, 2014 (the "FEIR Certificate"). Owing to concerns about traffic and transportation impacts caused by the anticipated popularity of the Project, the Secretary's Certificate required a SFEIR that was limited in scope to (i) traffic and transportation issues and (ii) a response to the comments received on the FEIR. The Secretary's Certificate on the SFEIR dated April 3, 2015 (the "SFEIR Certificate") required the preparation of this SSFEIR to address specific concerns raised regarding (i) the transfer of land from the Massachusetts Bay Transit Authority ("MBTA") to the Proponent and the impact of that land transfer on MBTA operations at that facility, (ii) the request of the Massachusetts Department of Transportation Rail and Transit Division/MBTA ("MassDOT Rail and Transit Division/MBTA") to provide Orange Line operating subsidies, (iii) the Massachusetts Department of Transportation Highway Division request to develop a plan to address long term improvements to the Rutherford Avenue corridor, and (iv) a response to the comments received on the SFEIR. This SSFEIR responds to the scope specified in the SFEIR Certificate.

Chapter 1 is a summary of the Project including a discussion of refinements to the Project design since the filing of the SFEIR. Chapter 1 also provides a summary of the MBTA land transfer to the Proponent and the impact of such land transfer on MBTA operations at that facility. In addition, Chapter 1 provides a description of actions taken following the issuance of the SFEIR Certificate to ensure full compliance with the Massachusetts Environmental Policy Act ("MEPA") process.

Chapter 2 addresses the MBTA's request for the Proponent to provide an Orange Line operations subsidy.

Chapter 3 is a focused transportation analysis for the Project conducted in consultation with the Massachusetts Department of Transportation ("MassDOT") and the MBTA. Chapter 3 includes clarification of analysis provided in the SFEIR and a discussion of the process that has been initiated for the purpose of developing a plan for the long-term improvements to the Rutherford Avenue corridor.

Chapter 4 is a comprehensive description of the Project's revised mitigation commitments and associated Draft Section 61 Findings.

Chapter 5 contains the response to all comments received on the SFEIR.

1.2.1 CHANGES TO THE PROJECT SINCE FILING THE SFEIR

1.2.1.1 BUILDING FLOOR PLAN AND GARAGE ADJUSTMENTS

Since submitting the SFEIR, the Proponent has continued to refine the design of and planning for this large and complex project. As a result of these activities, the Proponent has substantially reduced the amount of excavation and flood proofing required for the structured parking by raising the elevation of the finish floors and eliminating one full level of below-grade parking. The adjusted floor plans will now reflect a first level floor elevation of 25 NAVD88 at the main entrance for the gaming, restaurant and retail portions of the Project, with the convention space set at elevation 24 NAVD88. Adjustments have been made to accommodate the building transitions to the open space areas and the Harborwalk, which will remain at elevations proposed in the SFEIR of approximately 10.3 NAVD88 at the Harborwalk and up to approximately 12.5 in the open space areas. Garage floor elevations will be set at elevation NAVD88 -4, elevation 4.0 and elevation 13 for levels B-3, B-2 and B-1. All publicly accessible areas will be ADA compliant. See Figures 1-4, 1-5, 1-6 and 1-7.

1.2.1.2 ON-SITE PARKING

As requested by the Secretary and noted in several of the comment letters received on the Draft and Final EIR, the Proponent initiated a review of the parking arrangements for the Project in the context of the projected parking demand, the utilization of off-site parking for employees and the integration of the Project into the existing and expanded public transportation opportunities that will be available to patrons, guests and employees of the resort. These amenities have been expanded to include a subsidy to increase the available capacity of the Orange Line subway system through improved headways and associated efficiencies. As a result of the aforementioned evaluation, the on-site parking supply that is to be provided as a part of the Project has been reduced from 3,400 spaces to 2,930 spaces, which continues to be sufficient to accommodate the projected demand for parking at the resort (2,360 spaces) with sufficient reserve capacity to accommodate potential parking demand fluctuations. No changes are proposed to the use of off-site parking for employees of the resort (the Proponent will lease up to 800 spaces at three (3) off-site parking facilities for use by employees; no employee parking will be provided on-site except a limited number of spaces for Wynn executives and employees with disabilities).

The quantity of parking to be provided within the Project site was balanced between accommodating the projected demand with a reasonable reserve and the desire to constrain the available parking to promote the use of alternative modes of travel to single-occupant vehicles. The Project as currently designed (2,930 spaces) achieves this balance and includes a comprehensive Transportation Demand Management (TDM) that will encourage guests to use public transportation, water shuttle, or the shuttle bus service that will be operated as a part of the Project. These amenities, which will be marketed to guests of the resort, will serve as an inducement to achieve both a traffic volume and parking demand reduction for the Project. In addition, the Transportation Monitoring and Reporting Program will serve to document the actual traffic and parking demands of the Project, and includes specific measures to address conditions should the measured parking demand exceed the projected demand. See Figures 1-6 and 1-7.

1.2.2 CONCLUSIONS

As described in Section 1.2.1.1 and 1.2.1.2, adjustments to the Project design are inevitable parts of design development for a project of this magnitude. Adjustments to both the garage footprint and finish floor elevations, as well as a small reduction in parking spaces at the Project Site provide benefits by reducing earthworks and trucking of soil material off-site, and by continuing to support planned TDM measures and other proposed SOV reduction strategies to be initiated by the Proponent.

1.3 MBTA LAND TRANSFER

1.3.1 INTRODUCTION

The MBTA's main train and bus repair facility in Everett (the "MBTA Everett Shops") is located directly north of the Project Site. The MBTA Everett Shops is one of two MBTA "backshops" available to support the needs of all MBTA divisions and departments and primarily serves as the train repair facilities of the four MBTA Heavy and Light Rail Subway lines and the 1000 bus fleet.

Over the course of the past two years, the Proponent has engaged in numerous discussions with the MBTA with respect to the acquisition of a portion of the MBTA Everett Shops property. The discussions have ranged from the acquisition of as little as 0.5 acres of the MBTA Everett Shops property to the entire property. The primary focus point during these discussions was to ensure that operations at the MBTA Everett Shops would not be adversely impacted by any land transfer to the

Proponent. Ultimately, the parties identified three (3) small parcels of the MBTA Everett Shops land, totaling approximately 1.758 acres, for purchase by Proponent. These parcels (the "Acquired Parcels") are identified on a plan entitled "Approval Not Required Plan, 84 Broadway, Everett, Mass." ("ANR Plan") prepared by Feldman Land Surveyors dated January 7, 2014, attached hereto as Figure 1-8.

The Proponent ultimately purchased the Acquired Parcels in February 2015, following a public bidding process. Thereafter, and as described further below, on April 15, 2015 the Proponent and the MBTA entered into an escrow agreement regarding these parcels.

1.3.2 HISTORY OF THE PROCESS

Beginning in February 2013, the Proponent engaged in discussions with the MBTA for the acquisition of a portion of the MBTA Everett Shops. The potential acquisition of a portion of the MBTA Shops was first disclosed by Proponent in its Expanded Environmental Notification Form filed on May 31, 2013 ("EENF").

Following the filing of its EENF, the Proponent continued discussions with the MBTA regarding a potential acquisition of a portion of the MBTA Everett Shops. During these discussions, various options were considered including, for example, (i) the acquisition by the Proponent of the entire property comprising the MBTA Everett Shops, (ii) the acquisition of approximately one-quarter of the MBTA Everett Shops property and the construction of a new storage facility for the MBTA, (iii) relocation of the gate house that currently provides access to the MBTA Everett Shops, and (iv) the transfer of privately held land adjacent to the MBTA Everett Shops to the MBTA. The primary focus point during these discussions was to ensure that operations at the MBTA Everett Shops would not be adversely impacted by any land transfer to the Proponent.

Discussions with the MBTA continued following the filing of the Proponent's EENF and continued through fall of 2013. On December 16, 2013, the Proponent filed its DEIR identifying its preferred access plan for the Project Site, as shown in Figure 1-9. The proposed design required only minor land acquisitions and modifications to the MBTA Everett Shops. The DEIR described these proposed modified access routes for the MBTA Everett Shops, as shown in Figure 1-10.

On June 30, 2014, the Proponent filed its FEIR reiterating its preferred access plan for the Project Site and specifically addressing the required acquisition of land from the MBTA (approximately 0.5 acres) for the entrance. The FEIR described the removal and relocation of certain infrastructure elements to assure the continued smooth operation of the MBTA Everett Shops. In addition, the FEIR disclosed the Proponent's discussions with the MBTA to acquire an additional approximately 1.4 acres of the MBTA Everett Shops for the purpose of accommodating access

driveways to the service areas on the Project Site, as shown in Figures 1-11 and 1-12.. This land is located at the periphery of the MBTA Everett Shops.

On February 17, 2015, the Proponent filed its SFEIR, which contained a full description of the status of acquiring certain of the MBTA Everett Shops property from the MBTA. In particular, the Proponent disclosed that on August 26, 2014, the Proponent submitted an offer to the MBTA to acquire certain property of the MBTA Everett Shops for Six Million Dollars ($6,000,000), attached hereto as Appendix B. In addition, the Proponent disclosed that a competitive bidding process had commenced on September 3, 2014, and concluded on October 3, 2014. The Proponent was the only bidder. On January 29, 2015, the MBTA designated the Proponent as the successful bidder.

Following the filing of the SFEIR, the transfer of the Acquired Property was completed on February 26, 2015. Thereafter, and as described further below, on April 15, 2015 the Proponent and the MBTA entered into an escrow agreement regarding these parcels.

1.3.3 PARCELS SUBJECT TO LAND TRANSFER

The Acquired Land consists of three (3) small parcels of the MBTA Everett Shops as depicted in the ANR Plan (Figure 1-8).

Parcel 1 is a triangular parcel located in the south east corner of the MBTA Shops and is 22,511 square feet (0.517 acres).

Parcel 2 is a rectangular parcel running along the north west edge of the MBTA Shops and is 30,753 square feet (0.706 acres).

Parcel 3 is a rectangular parcel running along the north west edge of the MBTA parcel and is 23,330 square feet (0.535 acres).

The ANR Plan illustrates the existing conditions of each of the foregoing parcels. The proposed use of the Acquired Property is as set forth on Figure 1-14.

1.3.4 IMPACTS AND MITIGATION TO MBTA YARD OPERATIONS

The Proponent has discussed the layout and impacts of the proposed change in access to the MBTA Everett Shops with the MBTA. The configuration of the Project's main entrance requires the relocation of the MBTA's main gatehouse to the MBTA Everett Shops northerly to the west side of Broadway (Route 99) and opposite Beacham Street.

1.3.4.1 IMPACTS TO INFRASTRUCTURE

Main Access

Figure 1-15 shows the proposed relocation of the main access to the MBTA Everett Shops. A 10-foot wide, 60-foot long layover area has been added to the driveway's eastbound approach to the gatehouse to allow a larger vehicle to wait while another enters the MBTA Everett Shops. This new entrance will allow for a signalized entrance and exit on Broadway (Route 99), as well as turning lanes, a layover area, and a new gate/processing facility.

Loading Docks

Figures 1-16, 1-17, 1-18and 1-19 show WB-50 tractor-trailers entering or exiting the Project service driveway. Figure 1-20 shows a WB-50 tractor-trailer moving through the MBTA Everett Shops and maneuvering to use the loading docks. These maneuvers can be made without conflict. This new loading docks will allow for efficient loading and unloading of all vehicles servicing the MBTA Everett Shops.

In addition, the MBTA obtained an independent "Appraisal of Three Properties of Land off Broadway (Rte. 99), Everett, Massachusetts," prepared by Lincoln Property Company dated October 25, 2013 (the "Appraisal"). In the Appraisal, the appraiser noted that "[b]ased on discussions with the owner, the sale of these parcels will not have a negative impact on the use of the larger property by the MBTA. In fact, the sale of the parcels will facilitate construction of a new traffic light controlled intersection with Broadway which will facilitate better access to the remaining MBTA property. It should be noted that the MBTA has previously sold off portions of this larger property that are located along Broadway. These sites have been developed with various commercial uses."

1.3.4.2 IMPACTS TO OPERATIONS

Repair to Vehicles

The Proponent has prepared AutoTURN diagrams showing the movements of various vehicle types that are maintained at the MBTA Everett Shops. These diagrams have been reviewed by the MBTA. Figures 1-21, 1-22, 1-23, and 1-24 show an articulated bus (the largest vehicle) entering or exiting the driveway opposite Beacham Street from/to Broadway (Route 99). Figure 1-25 shows an articulated bus traversing the MBTA Everett Shops to the bus maintenance bays. None

of these maneuvers have any conflicts with the roadway layout shown or other MBTA Everett Shops features.

Figures 1-26 1-27, 1-X28, and 1-29 show a 40-foot city bus entering or exiting the driveway opposite Beacham Street. Figure 1-30 shows the city bus traversing the MBTA Everett Shops to the bus maintenance bays. Each maneuver can be made without conflict.

Figures 1-31, 1-32, 1-33, and 1-34 show a tow truck with an articulated bus entering and exiting the driveway opposite Beacham Street. Each maneuver can be made without conflict. A tow truck exiting the driveway onto Broadway southbound must utilize both southbound lanes to complete the turn, which is not unusual for this unusually large vehicle combination. A tow truck exiting the driveway onto Broadway northbound must turn into the outside travel lane. Figure 1-35 shows a tow truck towing an articulated bus traversing the MBTA Everett Shops to the bus maintenance bays with no conflicts.

1.3.4.3 PROPOSED MITIGATION

The Proponent will provide mitigation for the impact to the MBTA Everett Shops. The Proponent will construct the relocated entrance to the MBTA Everett Shops as shown in Figure 1-15. The relocated entrance will include a new gatehouse as well as a layover area east of the entrance to allow a vehicle to wait in the event that multiple larger vehicles arrive at the MBTA Everett Shops at the same time.

In addition, the Proponent will construct a new service road for its facility to which the MBTA will be granted an access easement for use 365 days a year, 24 hours per day. The service road will be constructed with a layover area, which can be used by either the Proponent or the MBTA to stage larger delivery vehicles prior to their entrance to either the Proponent's loading area or the MBTA Everett Shops loading area. The service road is shown in Figure 1-15.

The Proponent will also construct a new loading dock for the MBTA Everett Shops use. The location of that loading dock is shown in Figure 1-15.

1.3.5 BIDDING PROCESS

The sale of land by the MBTA is governed by Massachusetts General Laws Section 161A, Section 5(b), which reads as follows:

> b. No real estate shall be sold unless the sale shall have been advertised at least once a week for three successive weeks prior to the date of sale in a newspaper of general circulation in the city or town in which the real property to be sold is located; provided, that no such advertising shall be required if a sale or conveyance of such real estate is made to the commonwealth or any political subdivision thereof or to any agency or instrumentality of either of them. Such real property shall, unless sold to the commonwealth or any political subdivision thereof or to any agency or instrumentality of either of them, be sold to the highest bidder subject to any restrictions, covenants, or conditions the authority shall find that sound reasons in the public interest require.

As described above, the Proponent and the MBTA had extended discussions, commencing in February 2013, involving different options for the purchase and sale of portions of the MBTA Everett Shops property. An integral part of those discussions was the MBTA's non-negotiable position that no land could be sold which would inhibit any of the operations within the MBTA Shops. Those discussions culminated in an offer to purchase submitted by the Proponent on August 26, 2014, and accepted by the MBTA that same day, under the signature of Secretary Davey as Secretary and CEO (the "Wynn Offer"), attached hereto as Appendix B.

The Wynn Offer provided for "as is" purchase by the Proponent of three (3) small parcels of the MBTA Everett Shops totaling approximately 2.024 acres for $6,000,000. In addition, the Proponent agreed to (i) construct an improved access drive from Lower Broadway to the MBTA Everett Shops, (ii) provide signalization and related improvements to the connecting intersection at Lower Broadway, (iii) provide an improved loading dock and (iv) provide an easement to use the new service road. The Proponent paid a non-refundable deposit of One Million Five Hundred Thousand Dollars ($1,500,000) upon its submission of the Wynn Offer. The Wynn Offer specifically provides that relocation of the main entrance of the MBTA Everett Shops shall "not materially interfere with use and operation of the Everett Shops property by the MBTA."

The Wynn Offer was expressly subject to the advertisement and bid requirements of M.G.L. c. 161A, Sec. 5(b). Consistent with its enabling statute, the MBTA issued a public "Notice of Proposal and Request for Response" (the "RFR") with respect to the sale of the proposed property seeking to achieve the best value for the MBTA through an open, competitive process. The RFR allowed for other interested parties to make proposals to purchase the property. The MBTA issued the RFR through its designated representative, Massachusetts Realty Group, on September 3, 2014,

attached hereto as Appendix B. The RFR contained a copy of the Wynn Offer and established the following schedule for an open, competitive bid process:

RFR Available	September 3, 2014
Deadline for Written Questions	September 16, 2014 at 5:00 PM
Pre-Response Conference	September 18, 2014 at 11:00 AM
Response Deadline	October 3, 2014 at 11:00 AM

The RFR was published in the State Central Register on September 3, 2014 and advertised (i) in the Everett Independent on Wednesday, September 3, 2014, Wednesday, September 10, 2014, and Wednesday, September 17, 2014, and (ii) in The Boston Herald on Wednesday, September 3, 2014, Wednesday, September 10, 2014, and Wednesday, September 17, 2014. Copies of the Central Register receipt and the published advertisements are attached hereto as Appendix B.

On September 5, 2015, the Proponent completed the "Response Forms" to the RFR and submitted the same to the MBTA, attached hereto as Appendix B.

There were no competing proposals submitted by the October 3, 2014 deadline.

On January 29, 2015, the Proponent was notified by the MBTA of its designation as the successful bidder pursuant to the RFR as no qualified respondents offered better value to the MBTA than the transaction terms stated in the Offer, and the MBTA confirmed its acceptance of the Wynn Offer consistent with the terms of the RFR and that certain letter agreement by and between Proponent and the MBTA dated August 26, 2014. A copy of the designation letter is attached hereto as Appendix B.

Following the conclusion of the bid process, the Proponent and the MBTA met several times for the purpose of (i) refining the plans for the access road and the service driveway to better accommodate the ongoing operations of the MBTA Shops, (ii) determining the exact dimensions of the three (3) conveyance parcels, and (iii) determining the precise terms and conditions of easements rights. With respect to Parcel 3, during this negotiation process, it was determined that a portion of the Newburyport commuter right of way was included in Parcel 3. Therefore, Parcel 3 was reduced to eliminate the acquisition of any portion of the commuter right of way. The foregoing negotiation was contemplated by the Wynn Offer which provides, in pertinent part, that the exact location and dimensions of the parcels would be subject to mutual agreement and shall be confirmed by survey and creation of final legal descriptions. As a result of this process, the total area of the parcels was reduced to approximately 1.758 acres. The purchase price was not correspondingly reduced.

On February 26, 2015, the MBTA conveyed to the Proponent by Quitclaim Deed, recorded with the Middlesex South Registry of Deeds in Book 64987, Page 327 (the "Deed") (attached hereto as Appendix B), approximately 1.758 acres of the MBTA Everett Shops property. The Acquired Parcels are identified on the ANR Plan prepared by Feldman Land Surveyors dated January 7, 2014, as shown in Figures 1-8. In addition, the MBTA and the Proponent (and its affiliated parties) entered into an Easement Agreement dated February 26, 2015, whereby the Proponent granted to the MBTA certain temporary and permanent easements over Proponent's property for the purposes of relocating the entrance to the MBTA and providing the MBTA with additional access rights through the Project Site, attached hereto as Appendix B. A copy of the Closing Statement for the transaction is attached hereto as Appendix B.

1.3.6 COMPLIANCE WITH APPLICABLE LAW

On March 27, 2015, MassDOT submitted comments on the SFEIR (the "MassDOT Comment Letter") stating that due to a breakdown in the MassDOT/MBTA processes, the Deed was executed and delivered prior to the completion of the MEPA process. As set forth in the MassDOT Comment Letter, the transfer of the Acquired Parcels should have been conditioned on the conclusion of the MEPA process and the issuance of the Secretary's Certificate. As a result, for the specific purpose of ensuring full compliance with the MEPA process, the Proponent structured an escrow arrangement, as described below.

On April 15, 2015, Proponent and its affiliate, Everett Property, LLC (collectively, the "Wynn Parties") entered into an escrow agreement with the MBTA (the "Escrow Agreement"), attached hereto as Appendix B. Pursuant to the terms of the Escrow Agreement, Wynn executed a Quitclaim Deed to convey the property that is subject to the Deed back to the MBTA (a copy of the Quitclaim Deed is attached hereto as Appendix B). In addition, the Wynn Parties and the MBTA executed an agreement terminating the Easement Agreement (a copy of the Termination of Easement Agreement is attached hereto as Appendix B). Finally, the MBTA has placed Six Million Dollars ($6,000,000), the full amount of the purchase price paid by Proponent, into escrow.

The escrow agreement provides, in pertinent part, that the conveyance of the property shall be deemed to have not taken place unless and until the Secretary of Energy and Environmental Affairs has determined that, for the Project located on the Proponent's adjacent land that includes work or activities on the MBTA Everett Shops property: (1) no Environmental Impact Report is required; or (2) a single or final Environmental Impact Report is adequate and sixty (60) days have elapsed following publication of notice of the availability of the single or final Environmental Impact Report in the Environmental Monitor in accordance with 301

CMR 11.15(2), provided that the MBTA shall reconsider and confirm or modify the conveyance of the property pursuant to the Deed and any conditions following MEPA review.

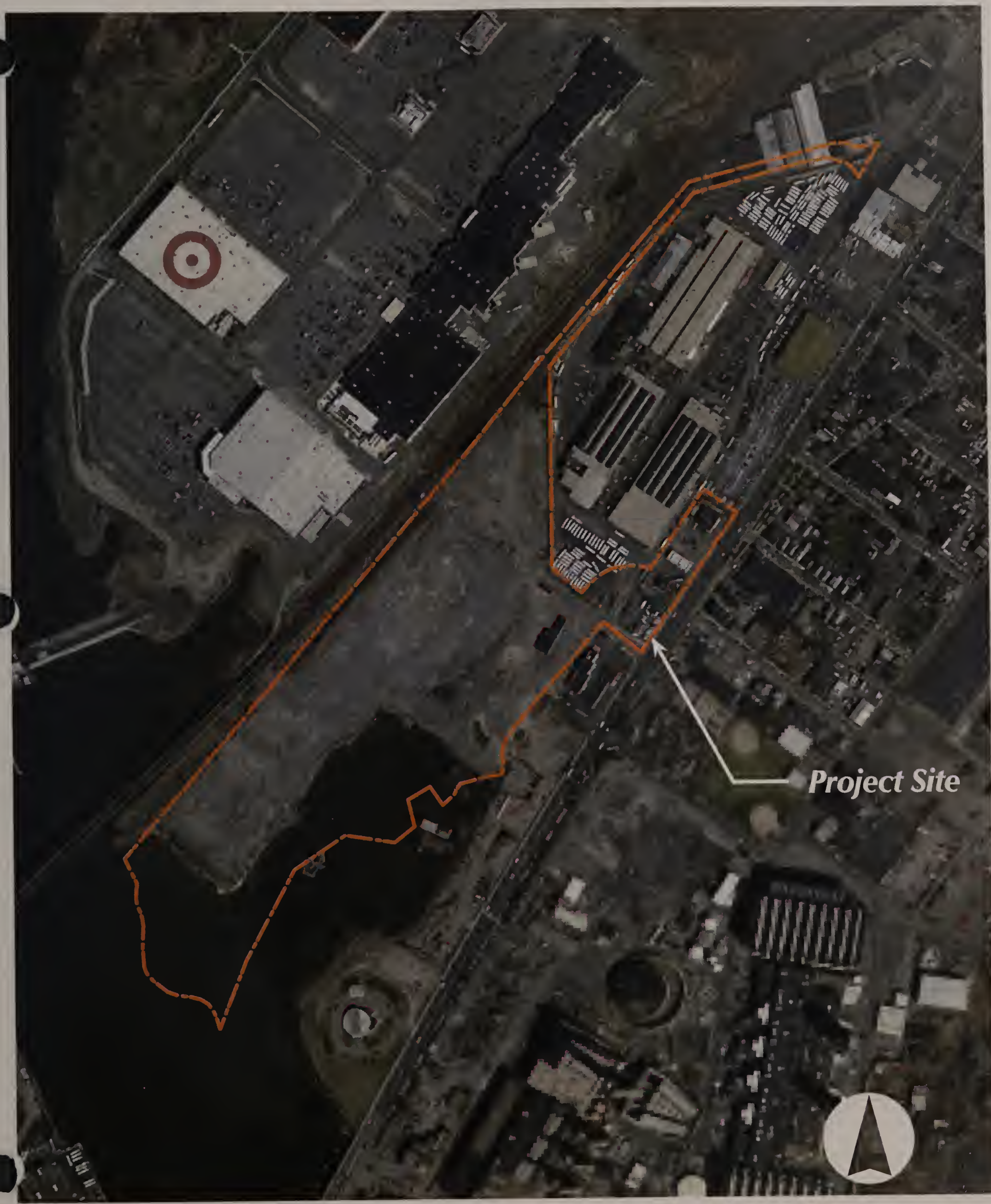
Pursuant to the terms of the Escrow Agreement, in the event the MBTA determines that the transaction requires no modifications or conditions or other mitigation, the escrow agent will return the Quitclaim Deed and Termination of Easement Agreement to the Proponent and the money to the MBTA. In the event the MBTA determines that the transaction requires modifications or conditions or other mitigation, the parties are obligated to work in good faith to document such required modifications, conditions or mitigation commitments after which the escrow agreement will return the Quitclaim Deed and Termination of Easement Agreement to Proponent and the money to the MBTA and record any such modifications. In the event that the parties cannot agree to any required modifications, conditions or other mitigation, the escrow agreement will file the Quitclaim Deed and Termination of Easement Agreement and return the money to Proponent.

Pursuant to the terms of the Escrow Agreement, the Proponent has agreed that it shall not commence any pre-construction or construction activities on the MBTA Everett Shops property until such time as the escrow is dissolved.

While the proposed transaction has been disclosed and discussed in the Proponent's prior filings over the course of the Proponent's MEPA process, the escrow arrangement will provide the public with all relevant information to enable the public to understand and provide any comments prior to the finalization of the transaction.

Wynn Resort in Everett
Everett, Massachusetts

Figure 1-1
Locus Map
Source: US Geological Survey, 1995



Wynn Resort in Everett
Everett, Massachusetts

Figure 1-2
Locus Aerial
Source: MassGIS, 2008

Wynn Everett
Everett, Massachusetts

Figure 1-3
Site Plan
Source: Lifescapes International, Inc., 2015

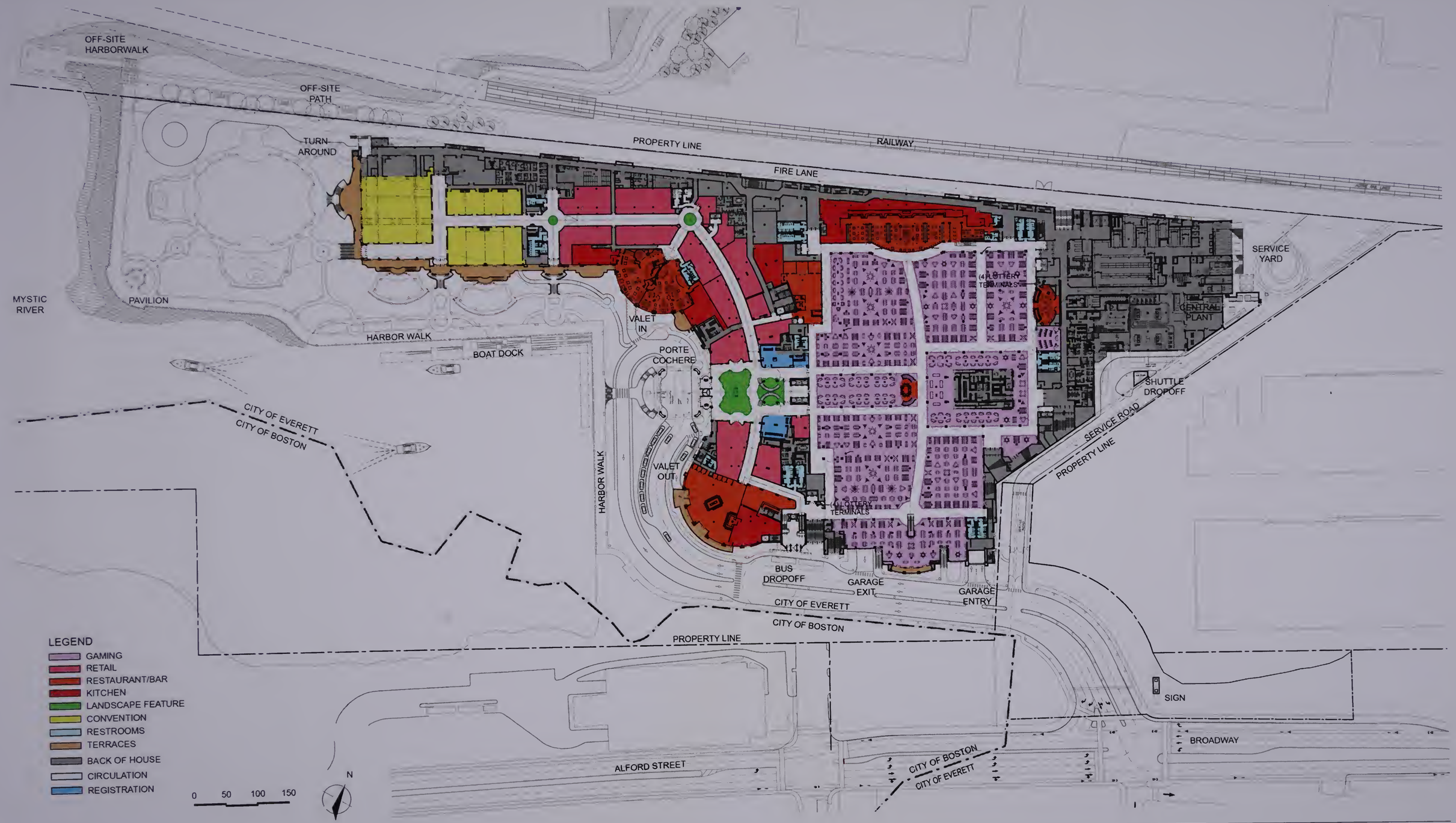


Figure 1-4
First Level Floor Plan
Source: Lifescapes International, Inc., 2015

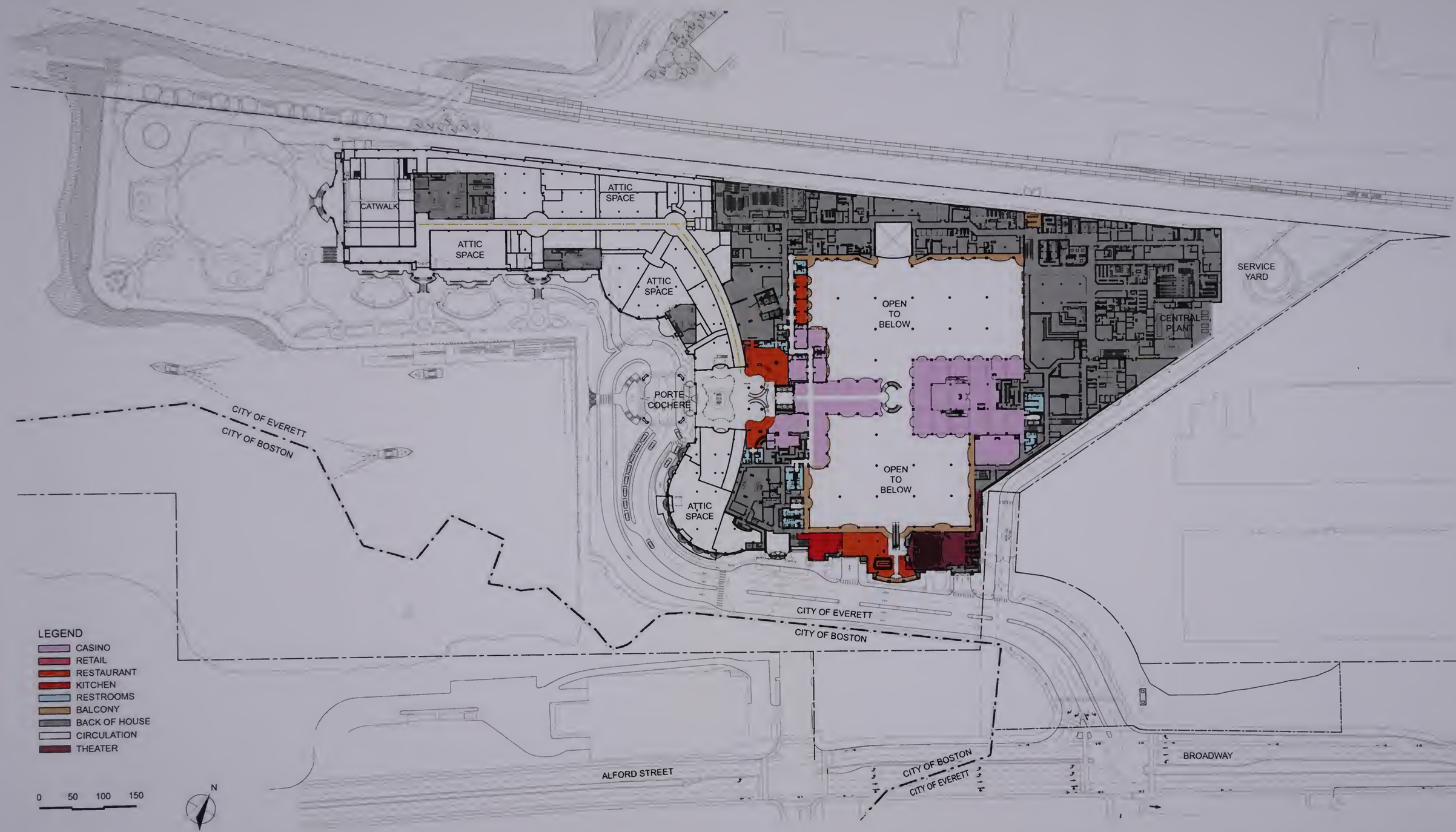
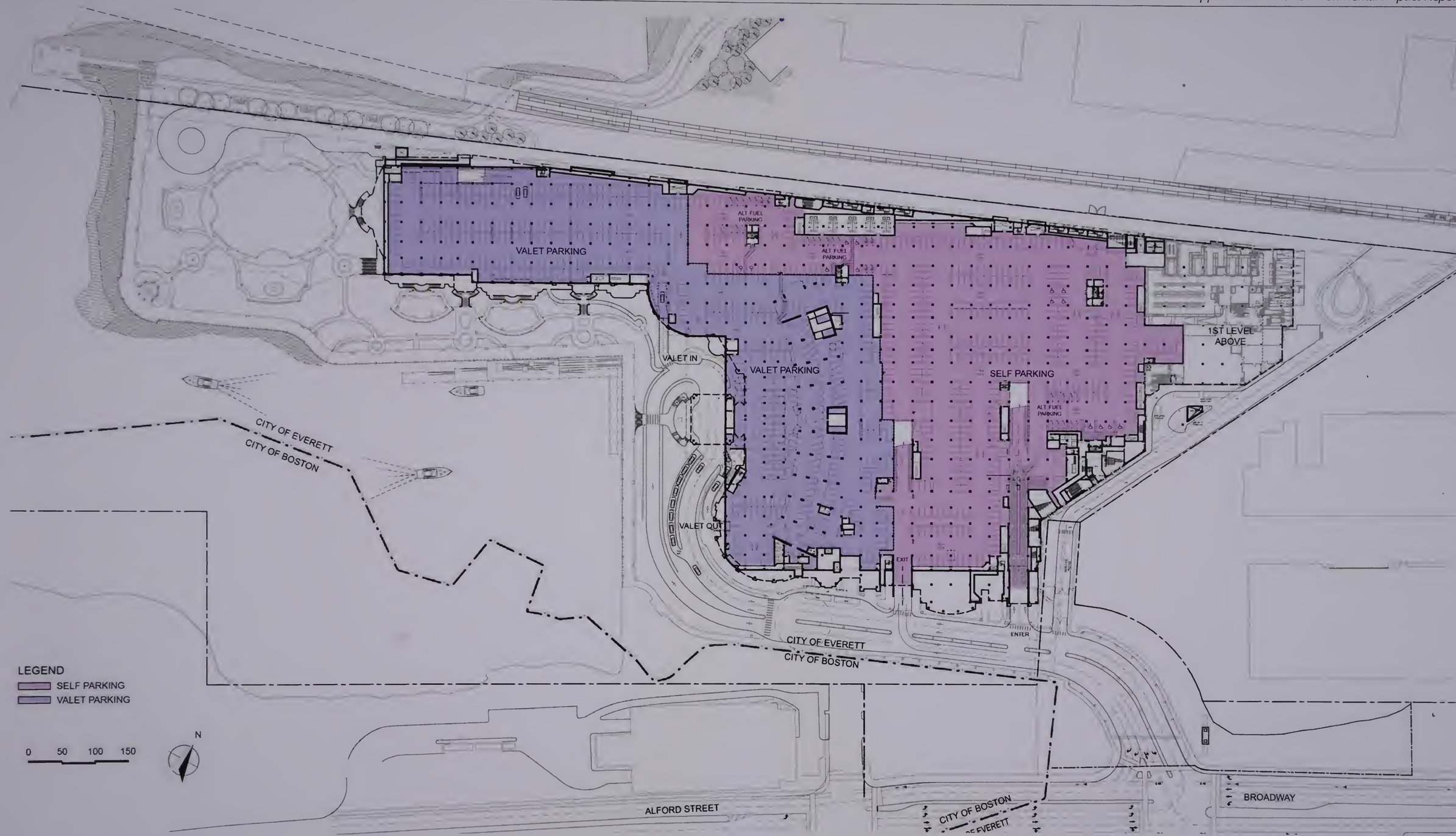


Figure 1-5
Second Level Floor Plan
Source: Lifescapes International, Inc., 2015



Wynn Resort in Everett
Everett, Massachusetts

Figure 1-6
Garage Level G1
Source: Lifescapes International, Inc., 2015

Wynn Resort in Everett
Everett, Massachusetts

Figure 1-7
Garage Levels G2 and G3
Source: Lifescapes International, Inc., 2015

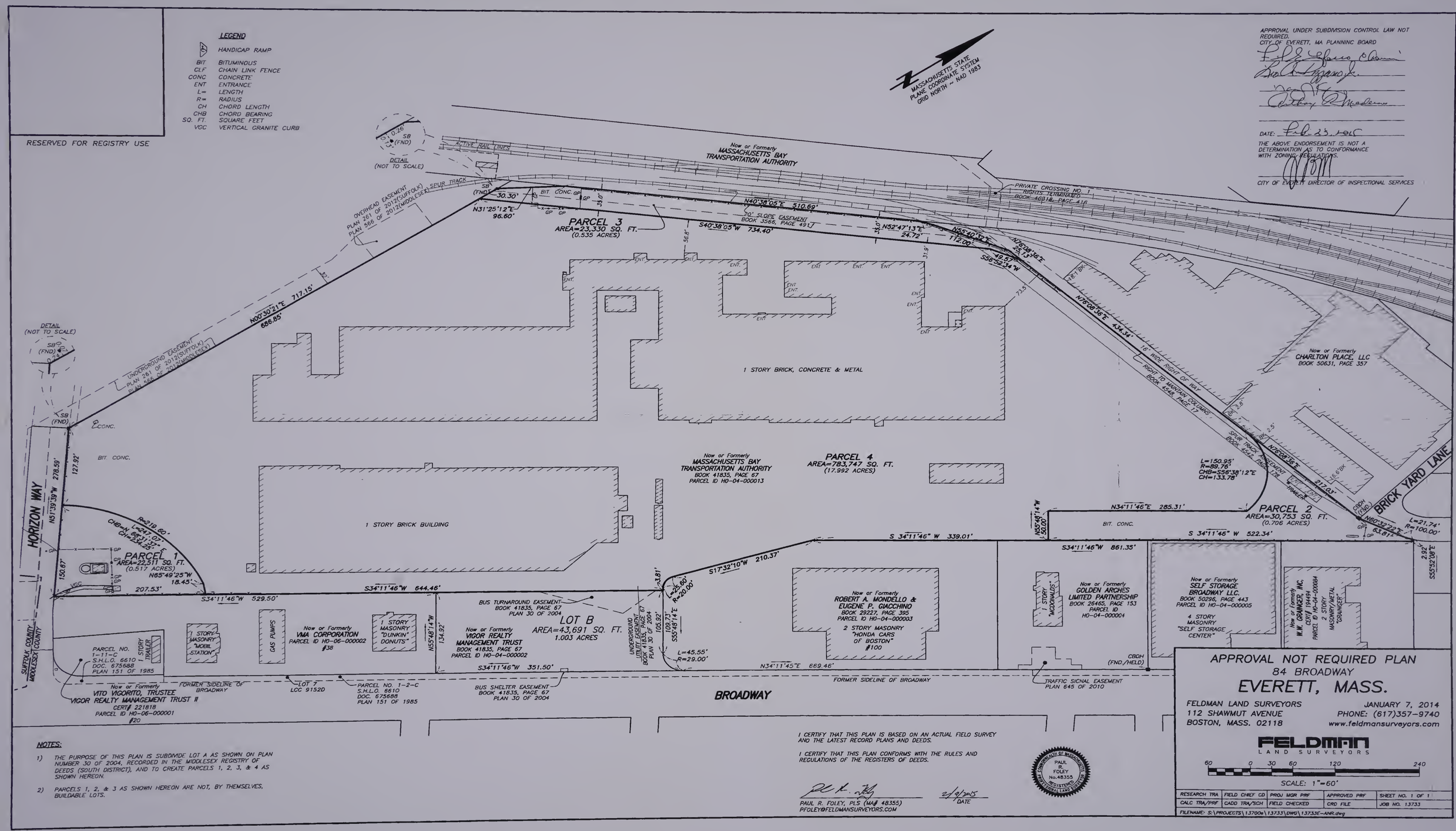
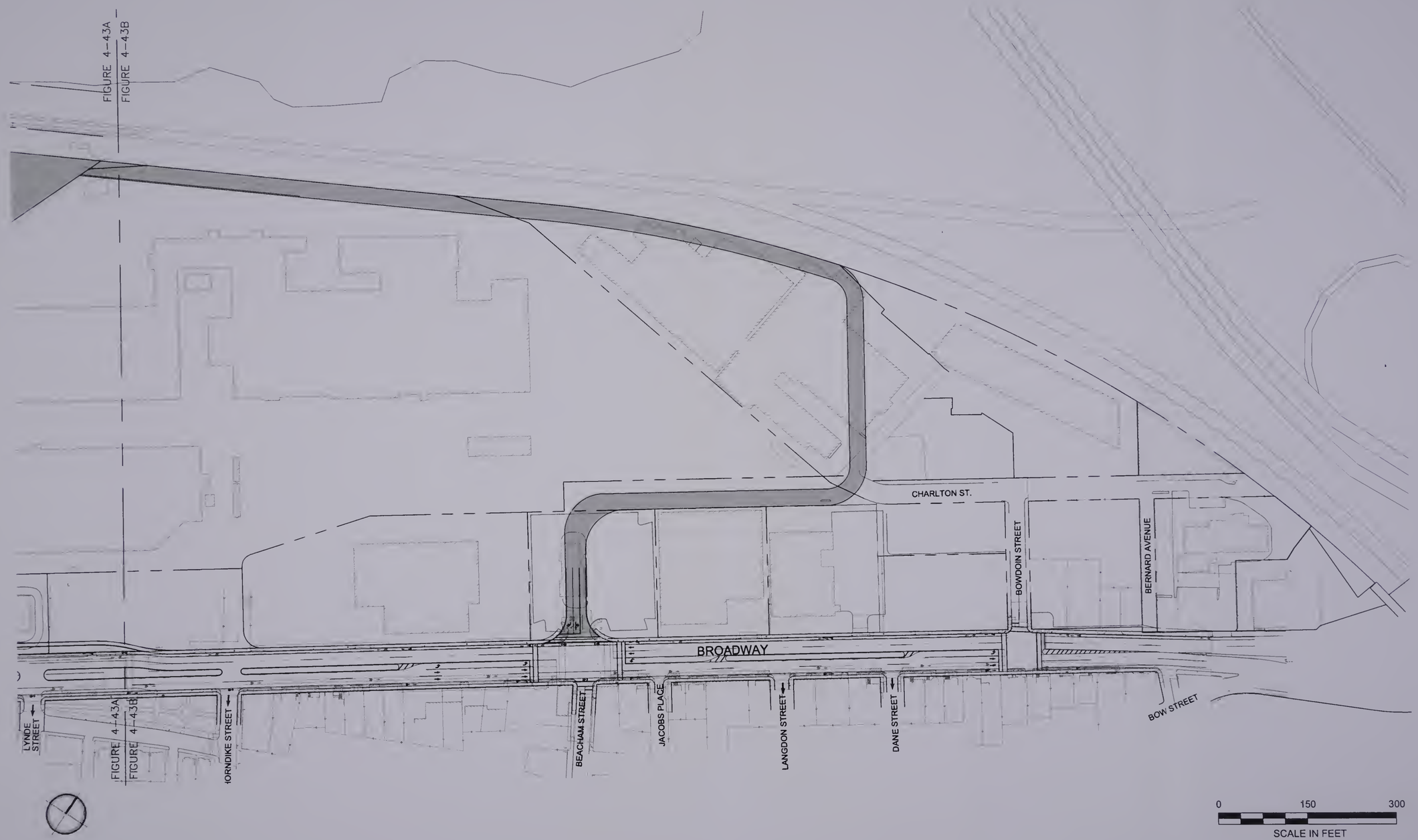


Figure 1-8
Approval Not Required Plan
Source: Feldman Land Surveyors, 2015

Wynn Everett
Everett, Massachusetts

Figure 1-9
Truck and MBTA Access Routes (as presented in Wynn Resort in Everett DEIR Figure 4-43A, December 16, 2013)
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Everett
Everett, Massachusetts

Figure 1-10
Truck and MBTA Access Routes (as presented in Wynn Resort in Everett DEIR Figure 4-43B, December 16, 2013)
Source: Howard/Stein-Hudson Associates, Inc., 2015

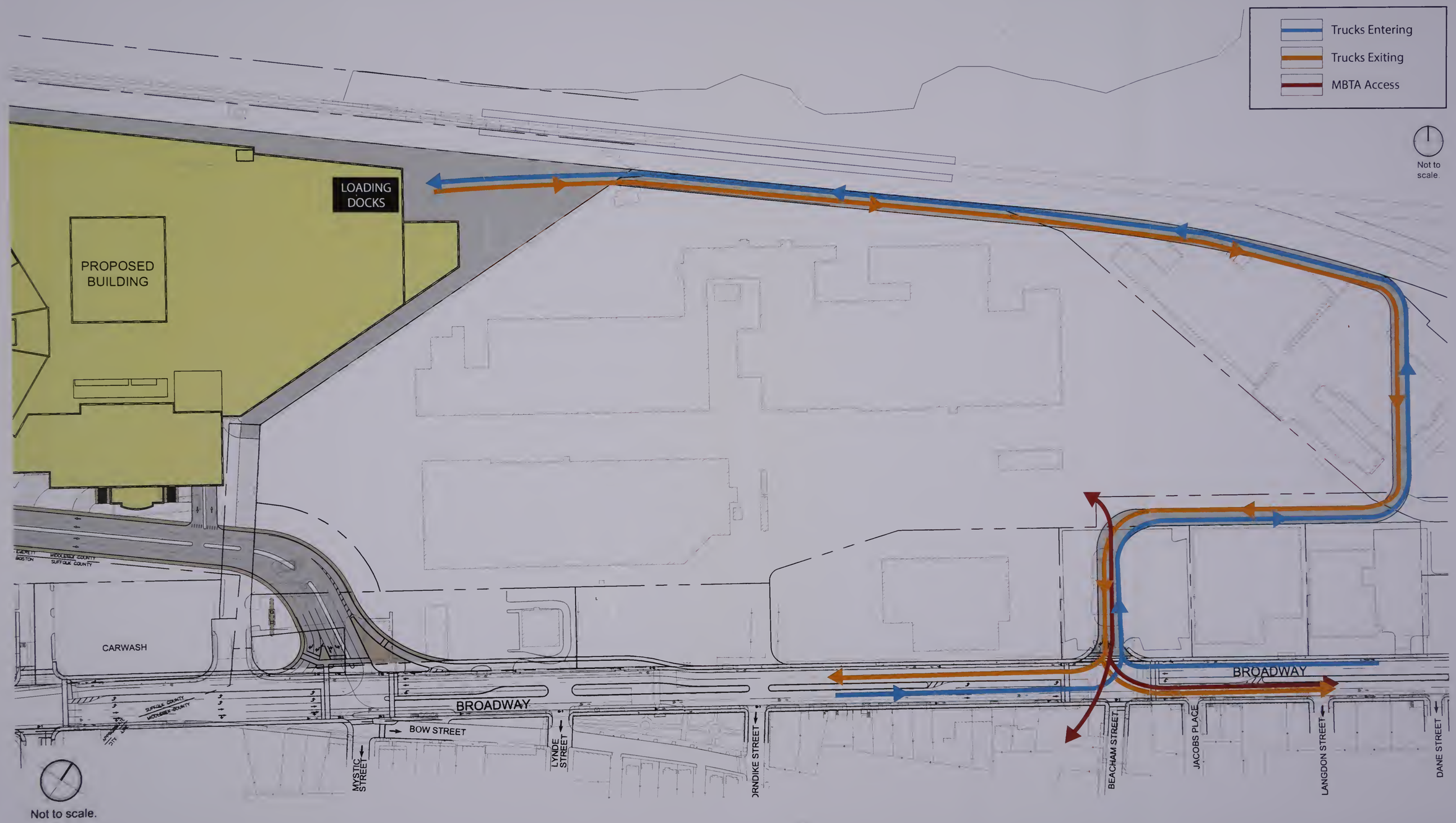
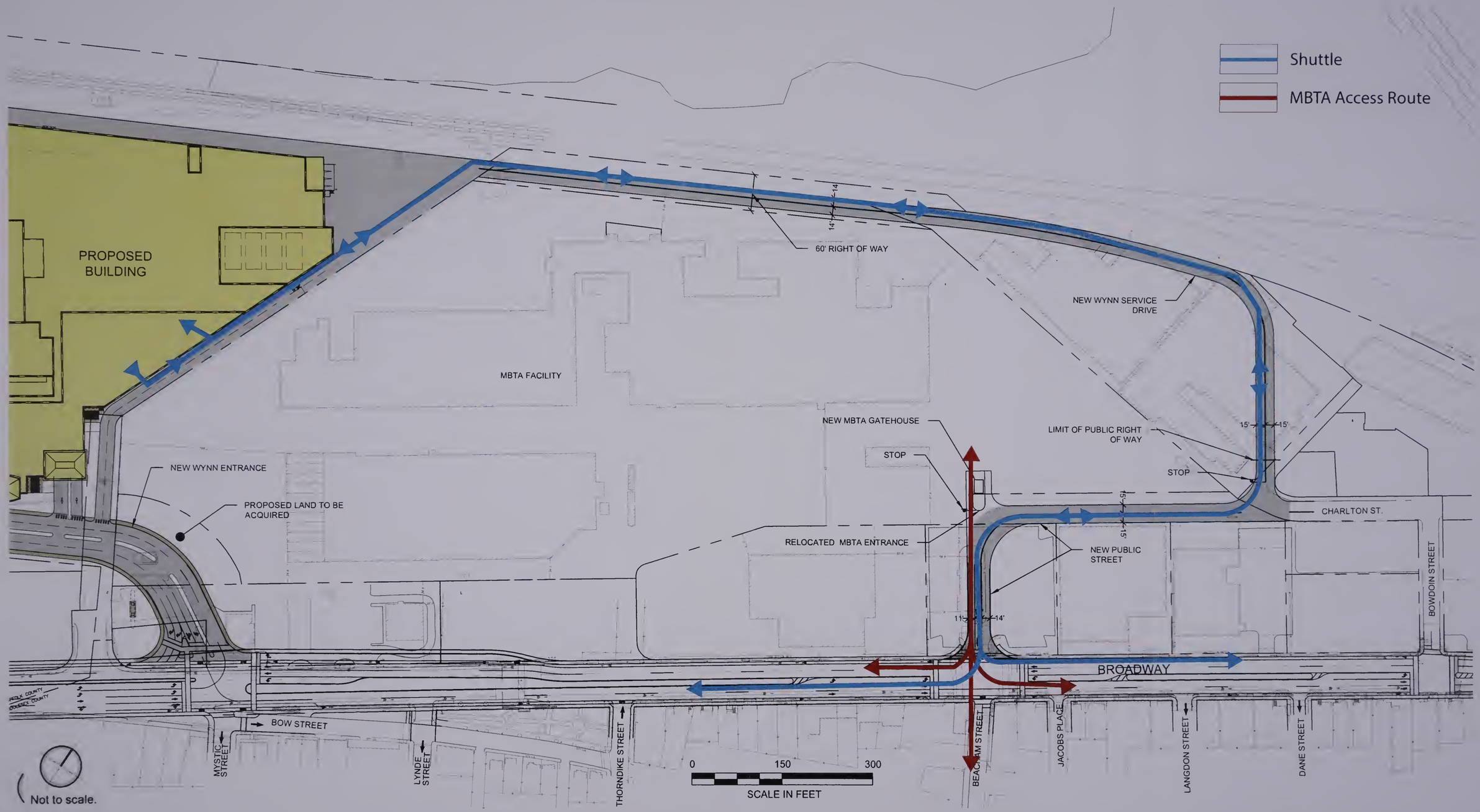


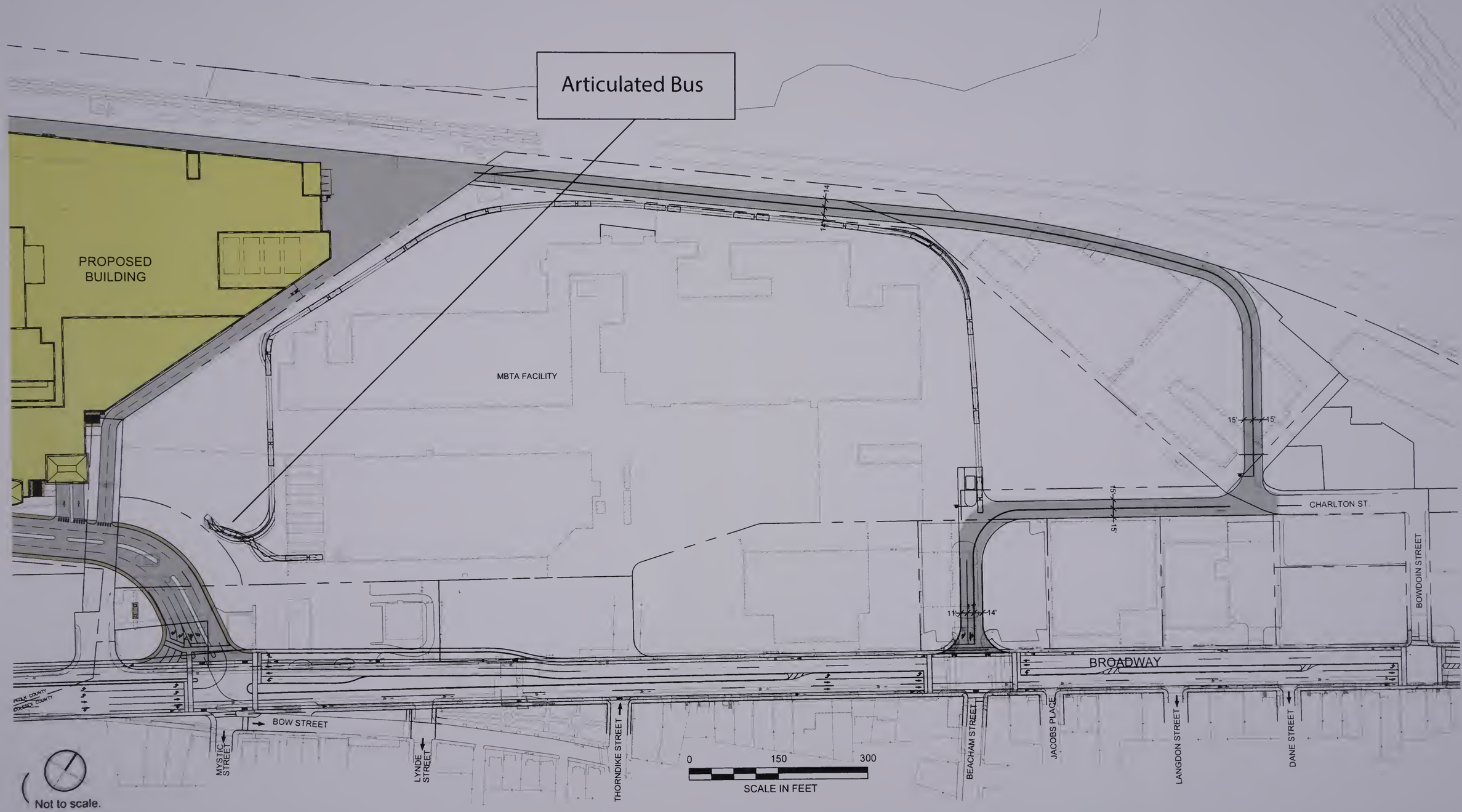
Figure 1-11
Truck and MBTA Access Routes (as presented in Wynn Resort in Everett DEIR Figure 4-44, December 16, 2013)
Source: Howard/Stein-Hudson Associates, Inc., 2015

Wynn Everett
Everett, Massachusetts



Wynn Everett
Everett, Massachusetts

Figure 1-12
MBTA Maintenance Facility Proposed Access Configuration (as presented in Wynn Resort in Everett FEIR Figure 4-7, June 30, 2014)
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Everett
Everett, Massachusetts

Figure 1-13
MBTA Maintenance Facility, On-site Operations (as presented in Wynn Resort in Everett FEIR Figure 4-8, June 30, 2014)
Source: Howard/Stein-Hudson Associates, Inc., 2015

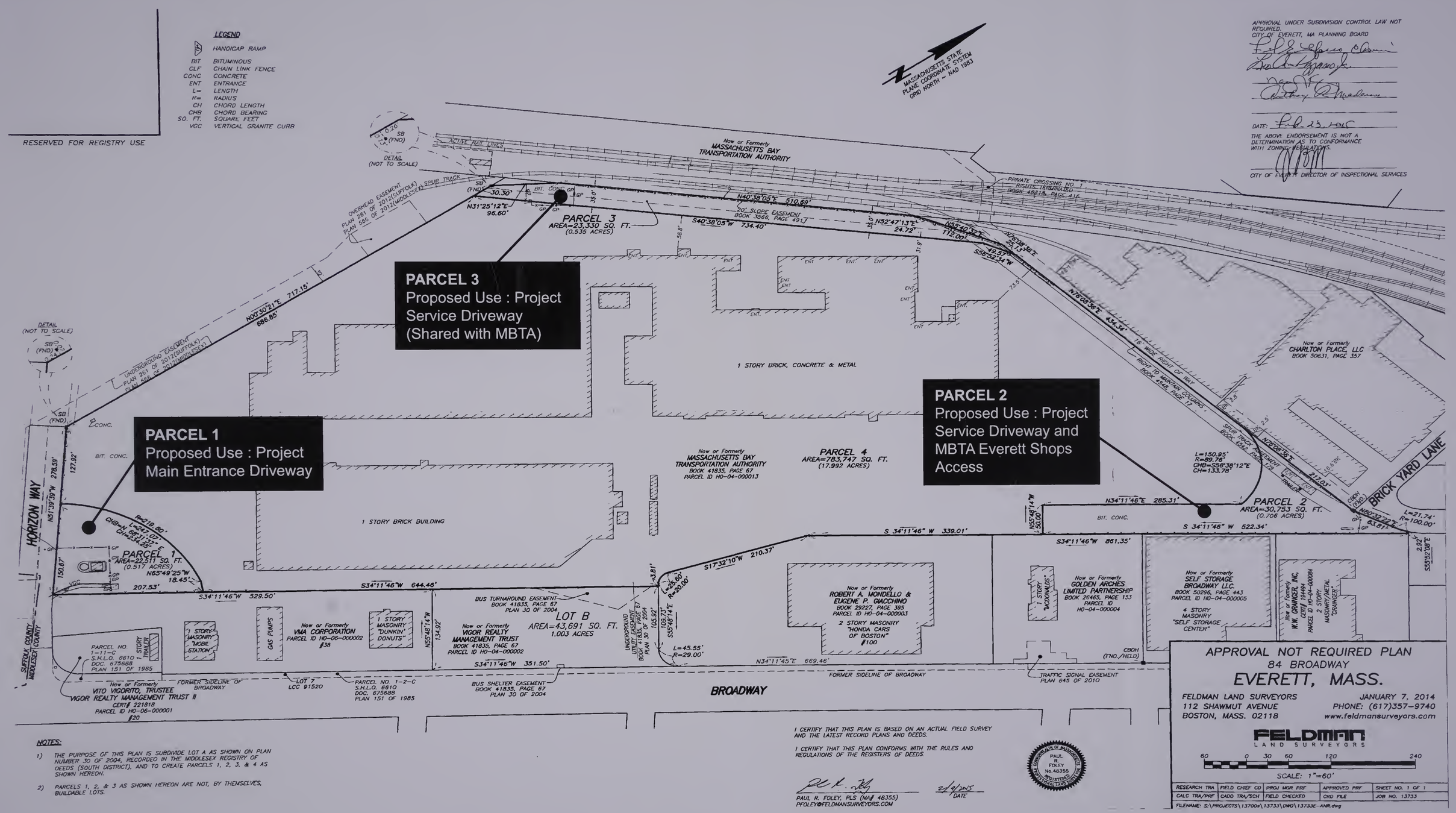
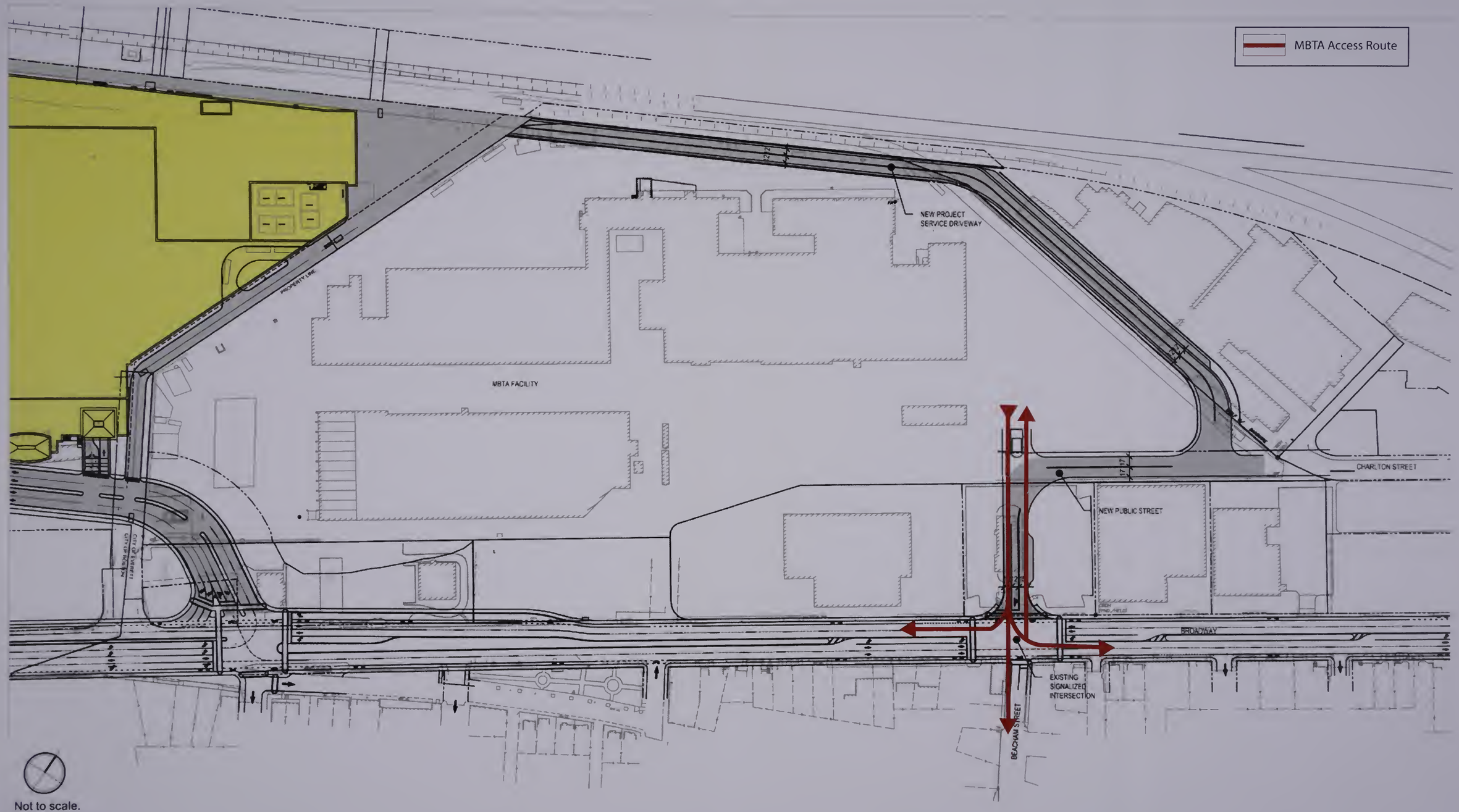


Figure 1-14
Proposed Use of MBTA Property
Source: Feldman Land Surveyors, 2015



Wynn Everett
Everett, Massachusetts

Figure 1-15
Site Access Configuration (as presented in Wynn Resort in Everett SFEIR Figure 1-24C, February 17, 2015)
Source: Howard/Stein-Hudson Associates, Inc., 2015

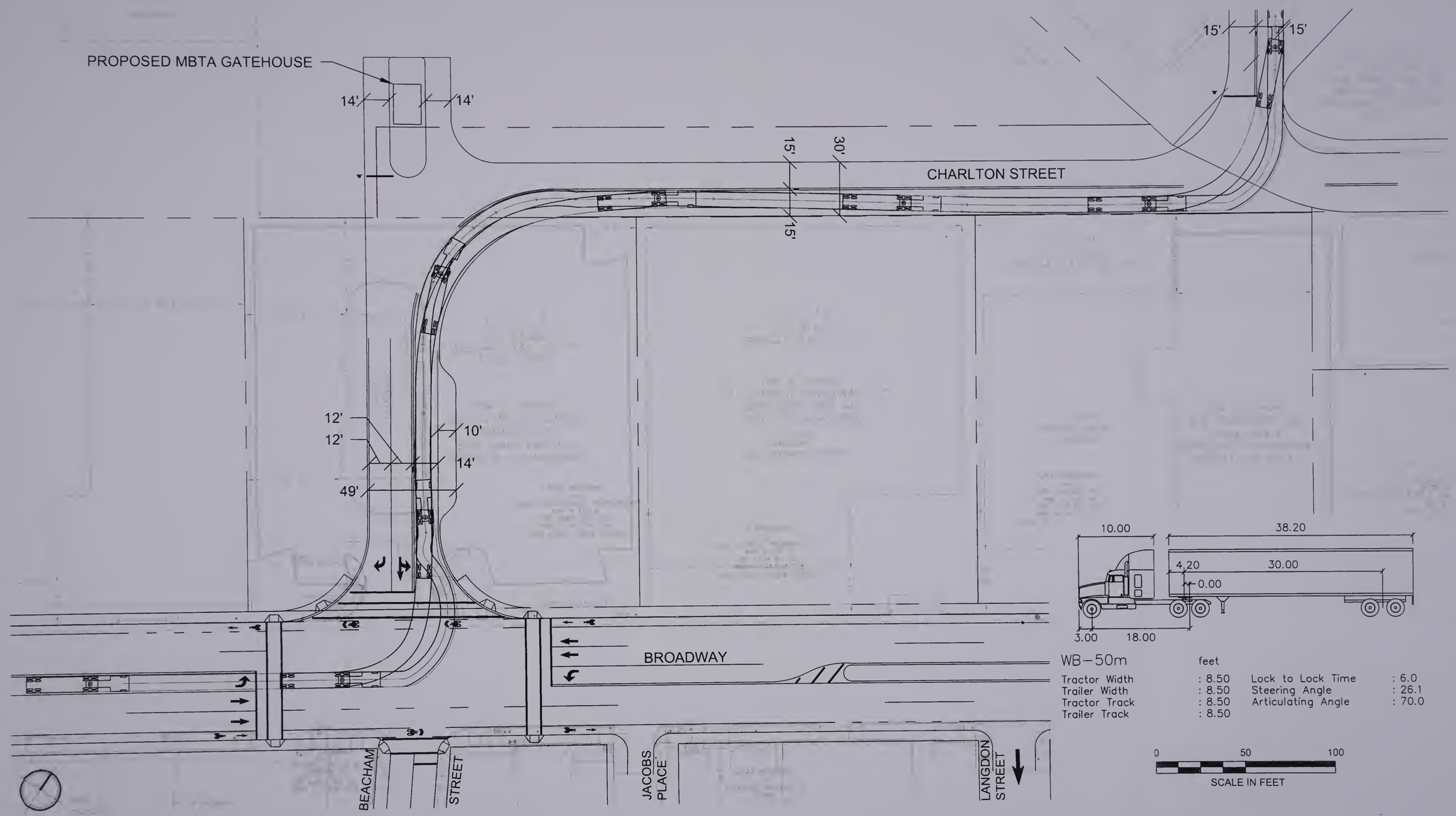


Figure 1-16
WB-50 Tractor-trailer Entering Wynn Service Drive from South
Source: Howard/Stein-Hudson Associates, Inc., 2015

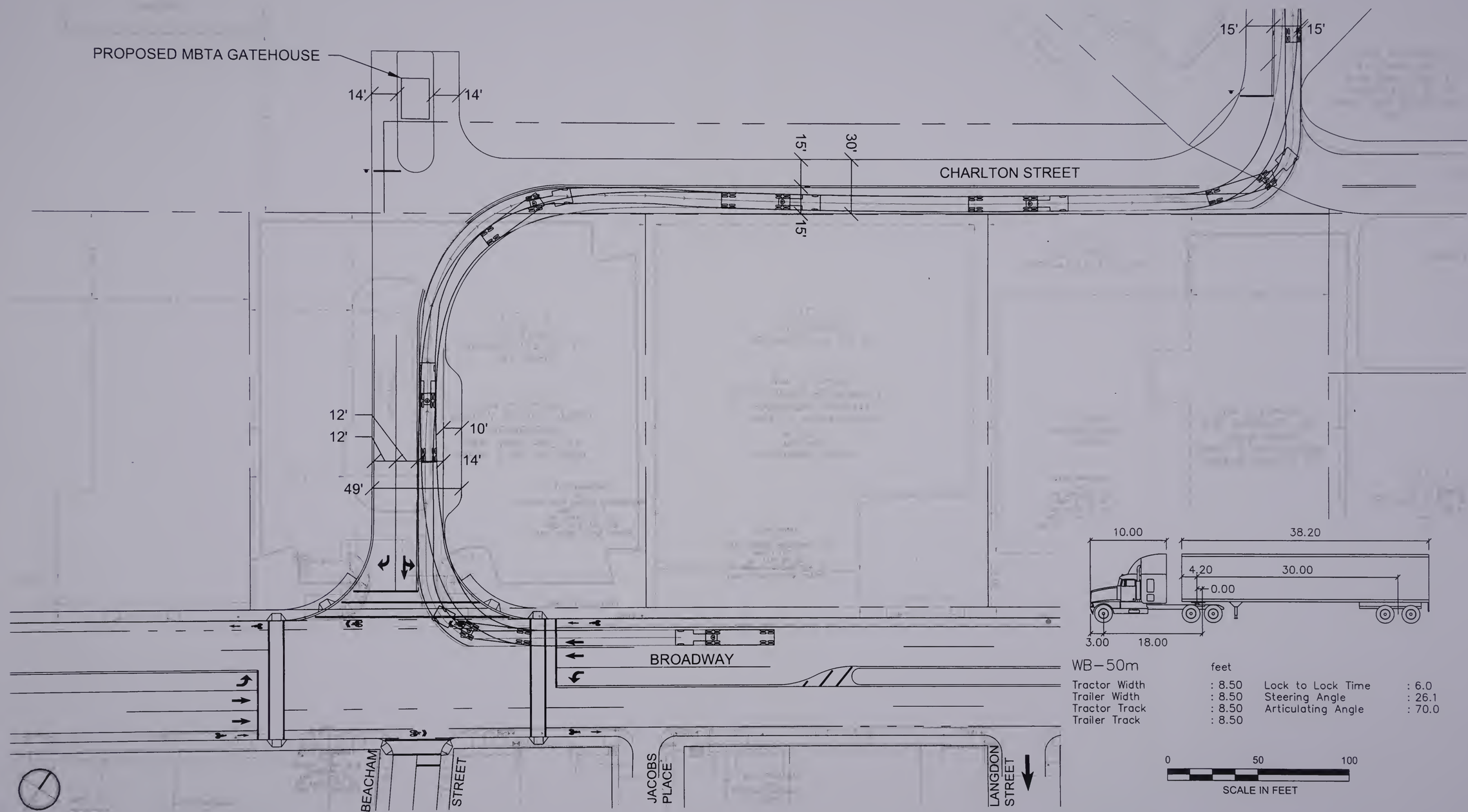


Figure 1-17
WB-50 Tractor-trailer Entering Wynn Service Drive from North
Source: Howard/Stein-Hudson Associates, Inc., 2015

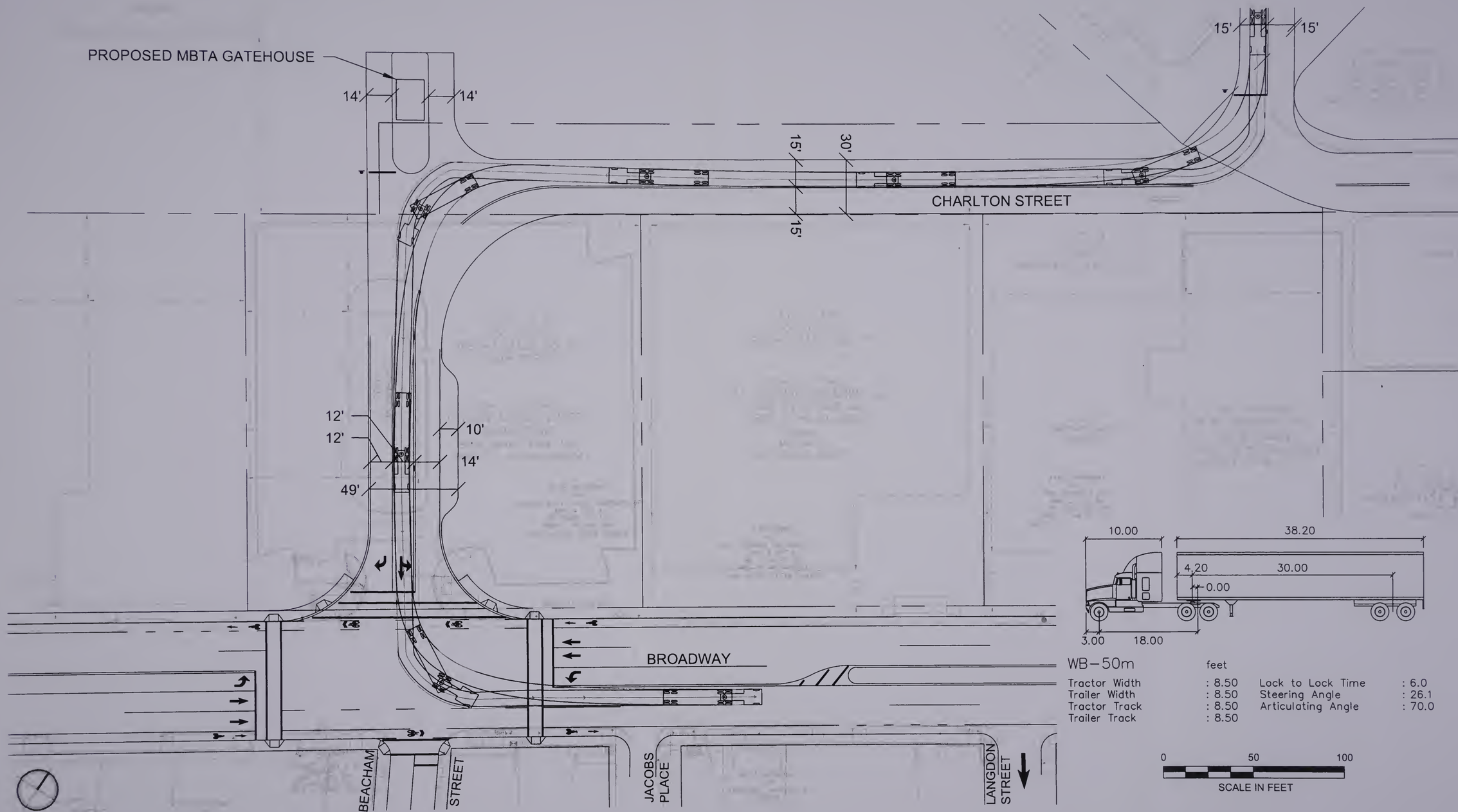


Figure 1-18
WB-50 Tractor-trailer Exiting Wynn Service Drive to North
Source: Howard/Stein-Hudson Associates, Inc., 2015

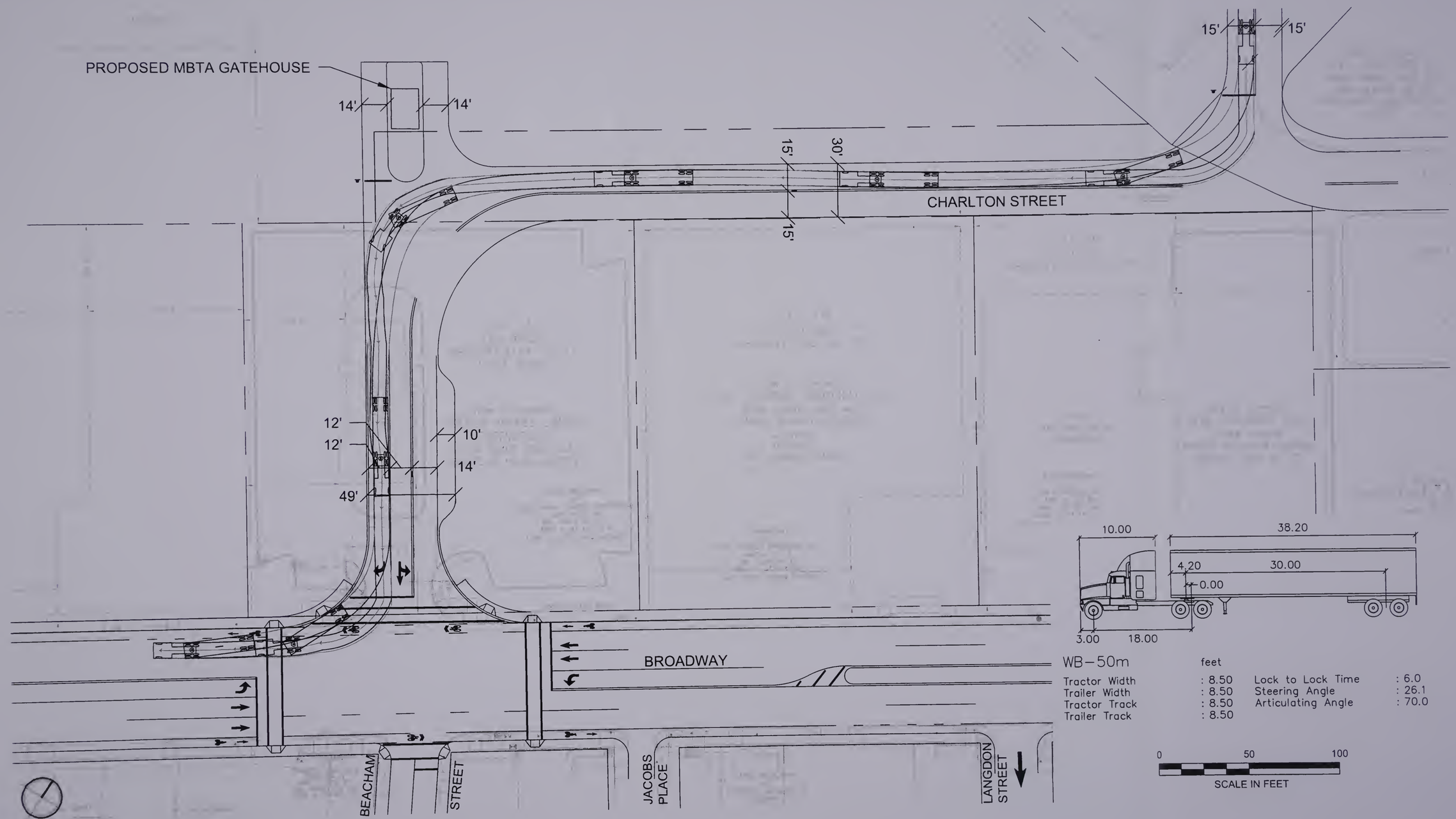
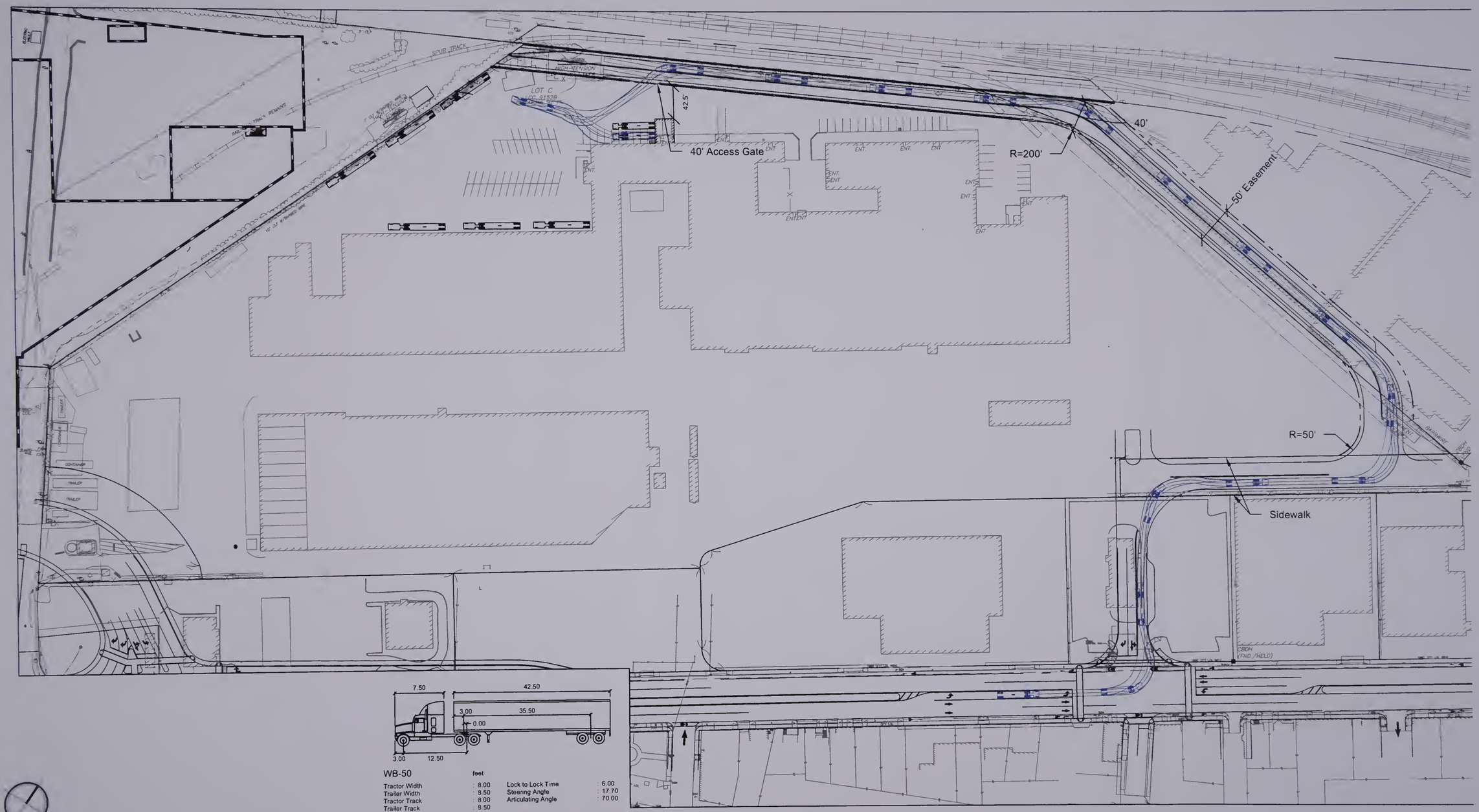


Figure 1-19
WB-50 Tractor-trailer Exiting Wynn Service Drive to South
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Everett
Everett, Massachusetts

Figure 1-20
WB-50 Tractor-trailer Accessing MBTA Everett Shops Loading Docks
Source: Howard/Stein-Hudson Associates, Inc., 2015

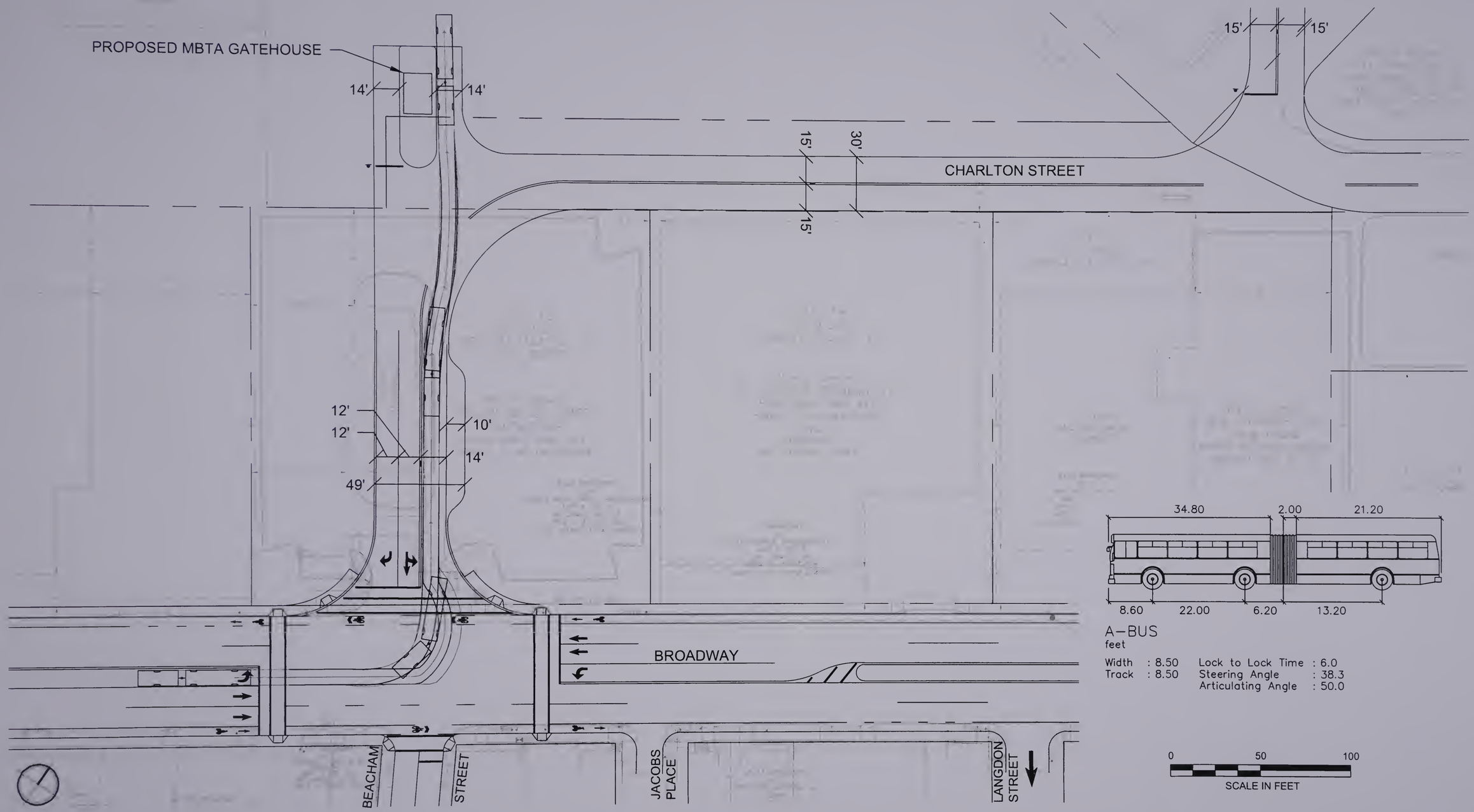
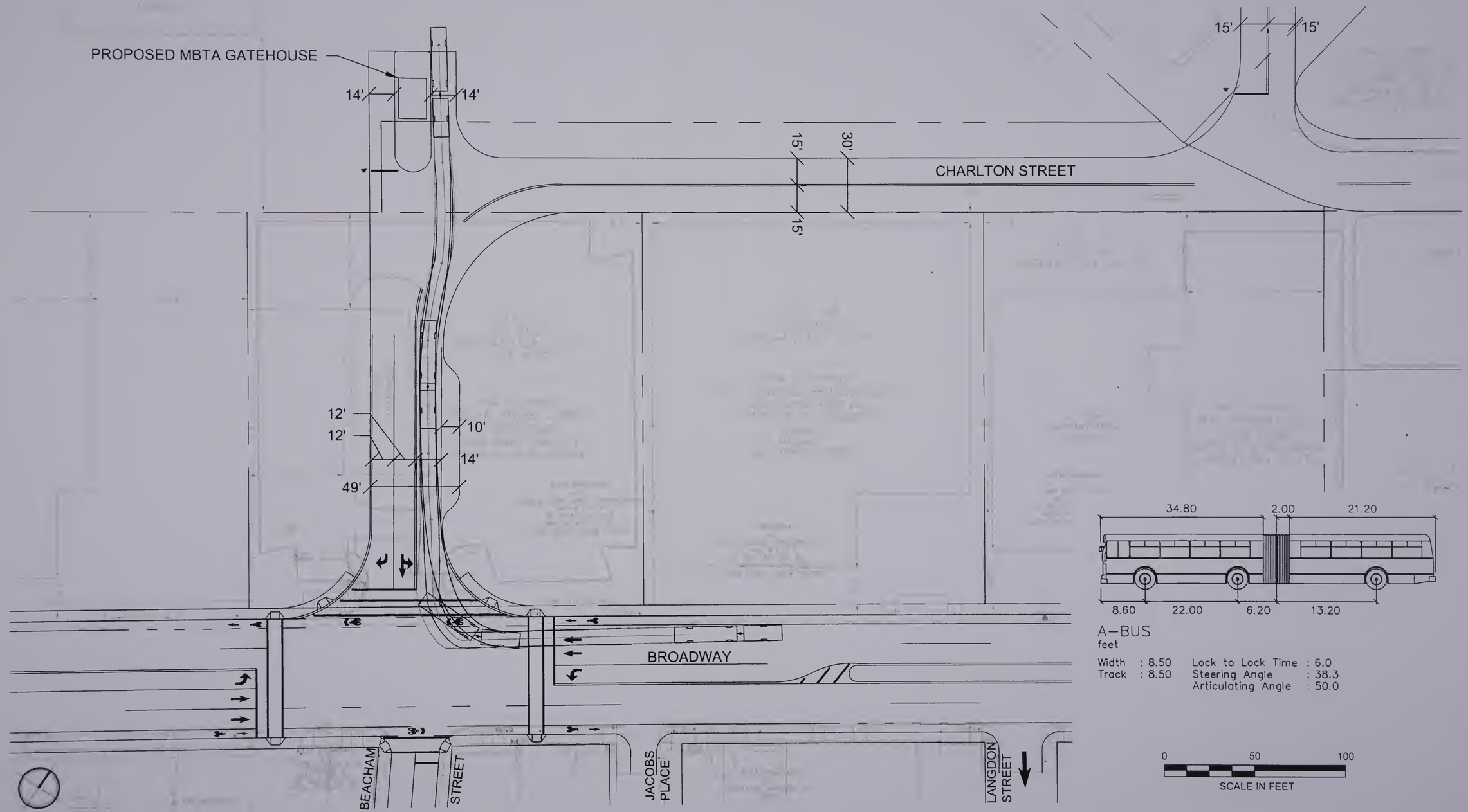


Figure 1-21
Articulated Bus Entering MBTA Everett Shops from South
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Everett
Everett, Massachusetts

Figure 1-22
Articulated Bus Entering MBTA Everett Shops from North
Source: Howard/Stein-Hudson Associates, Inc., 2015

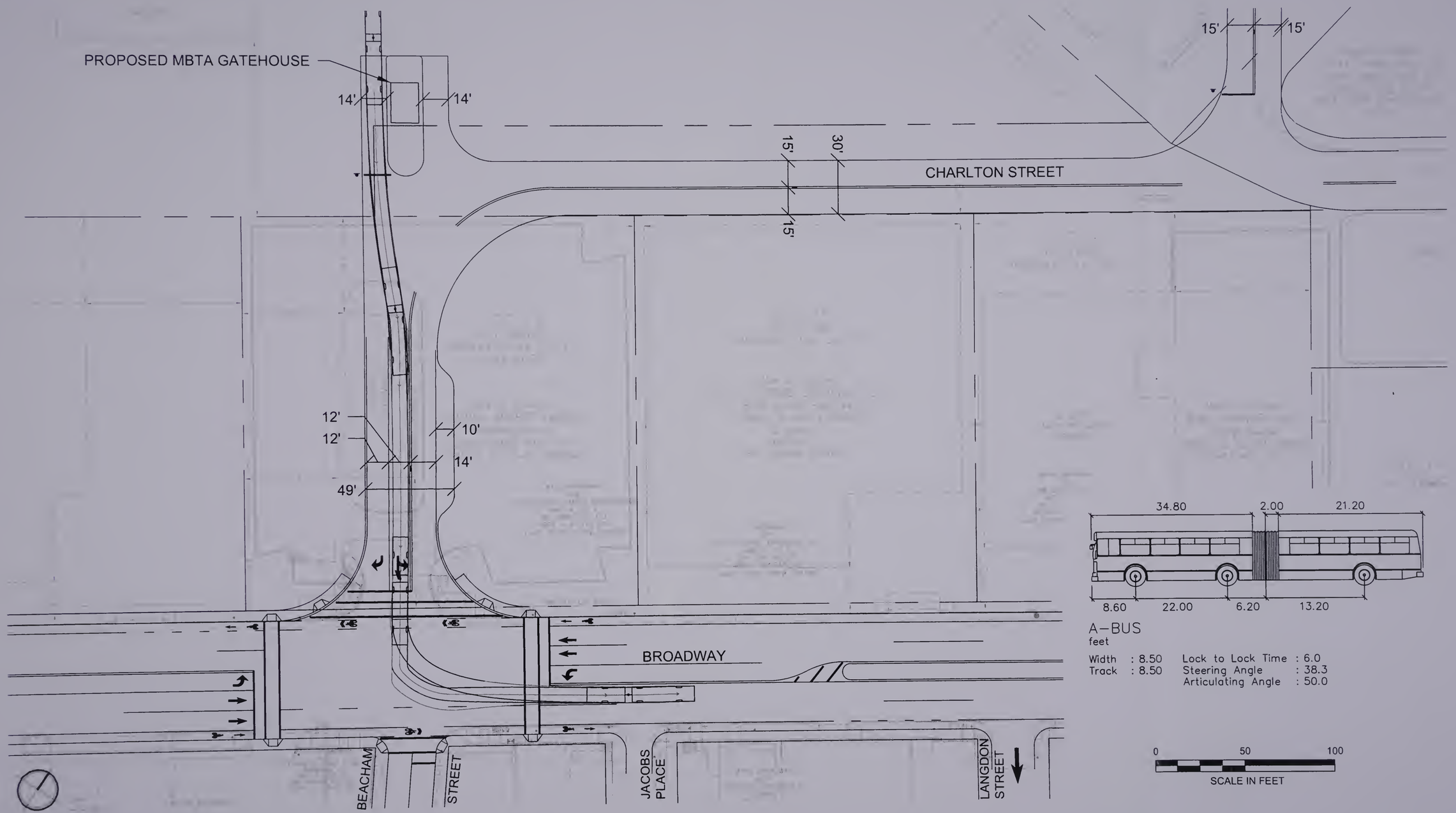


Figure 1-23
Articulated Bus Exiting MBTA Everett Shops to North
Source: Howard/Stein-Hudson Associates, Inc., 2015

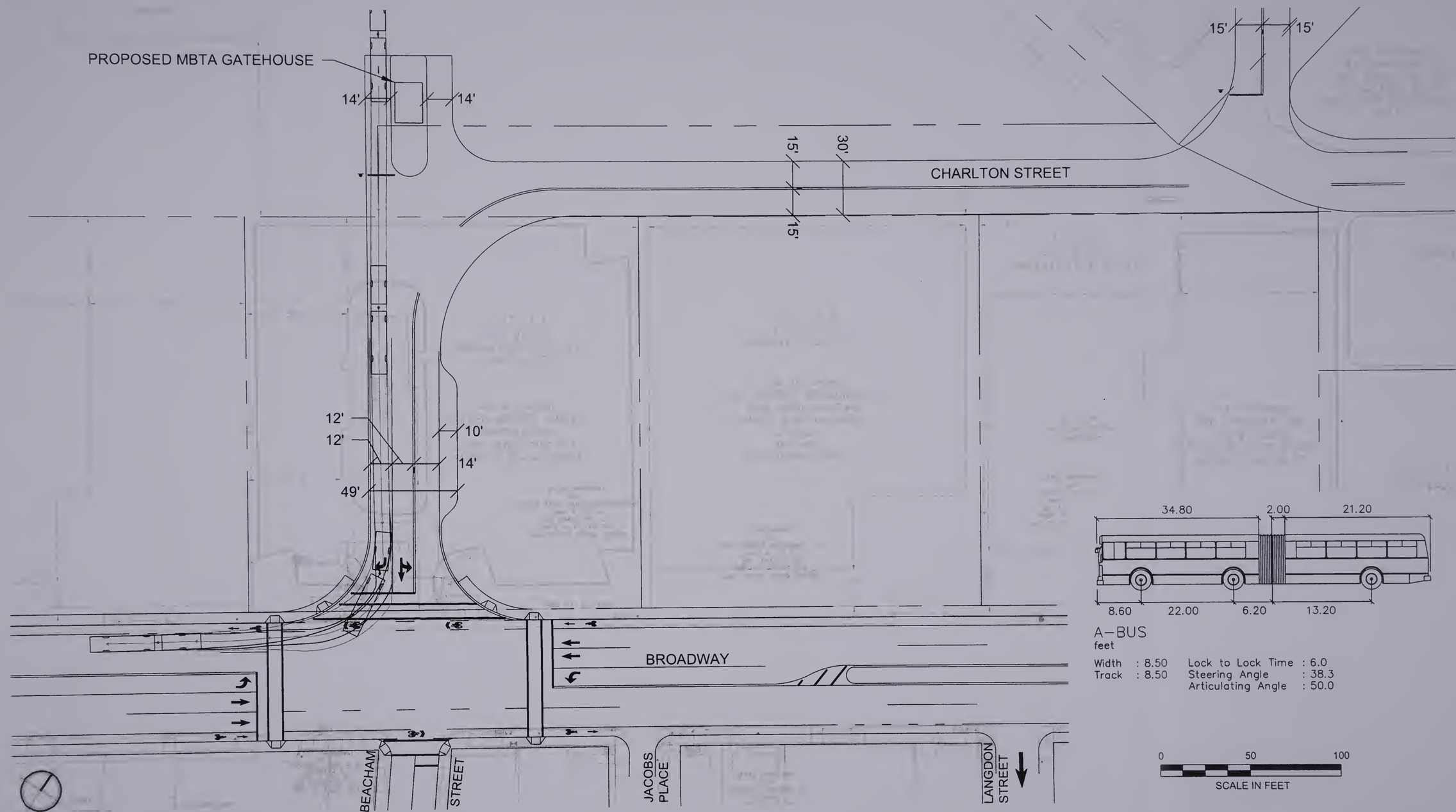


Figure 1-24
Articulated Bus Exiting MBTA Everett Shops to South
Source: Howard/Stein-Hudson Associates, Inc., 2015

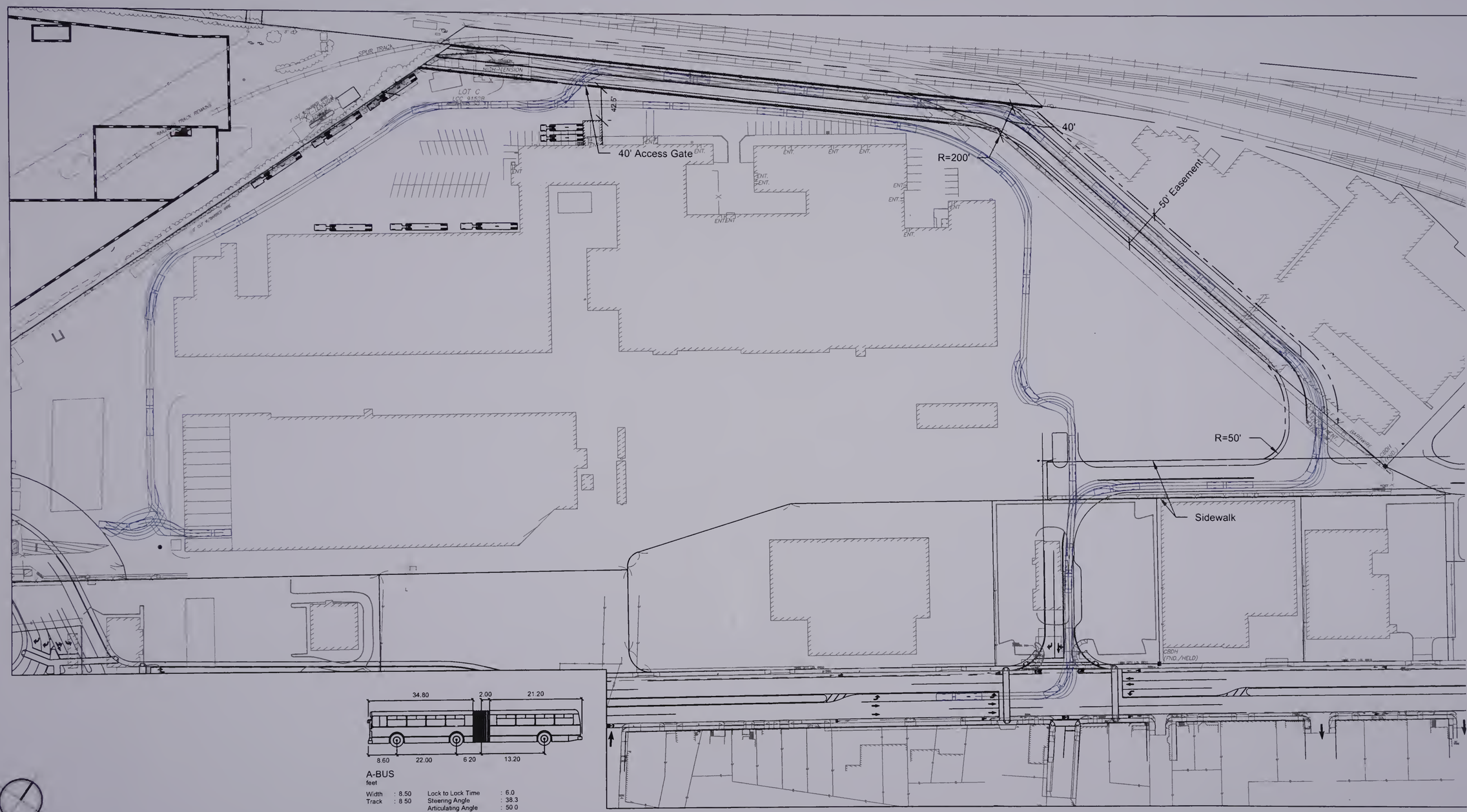


Figure 1-25
Articulated Bus Moving through MBTA Everett Shops Site
Source: Howard/Stein-Hudson Associates, Inc., 2015

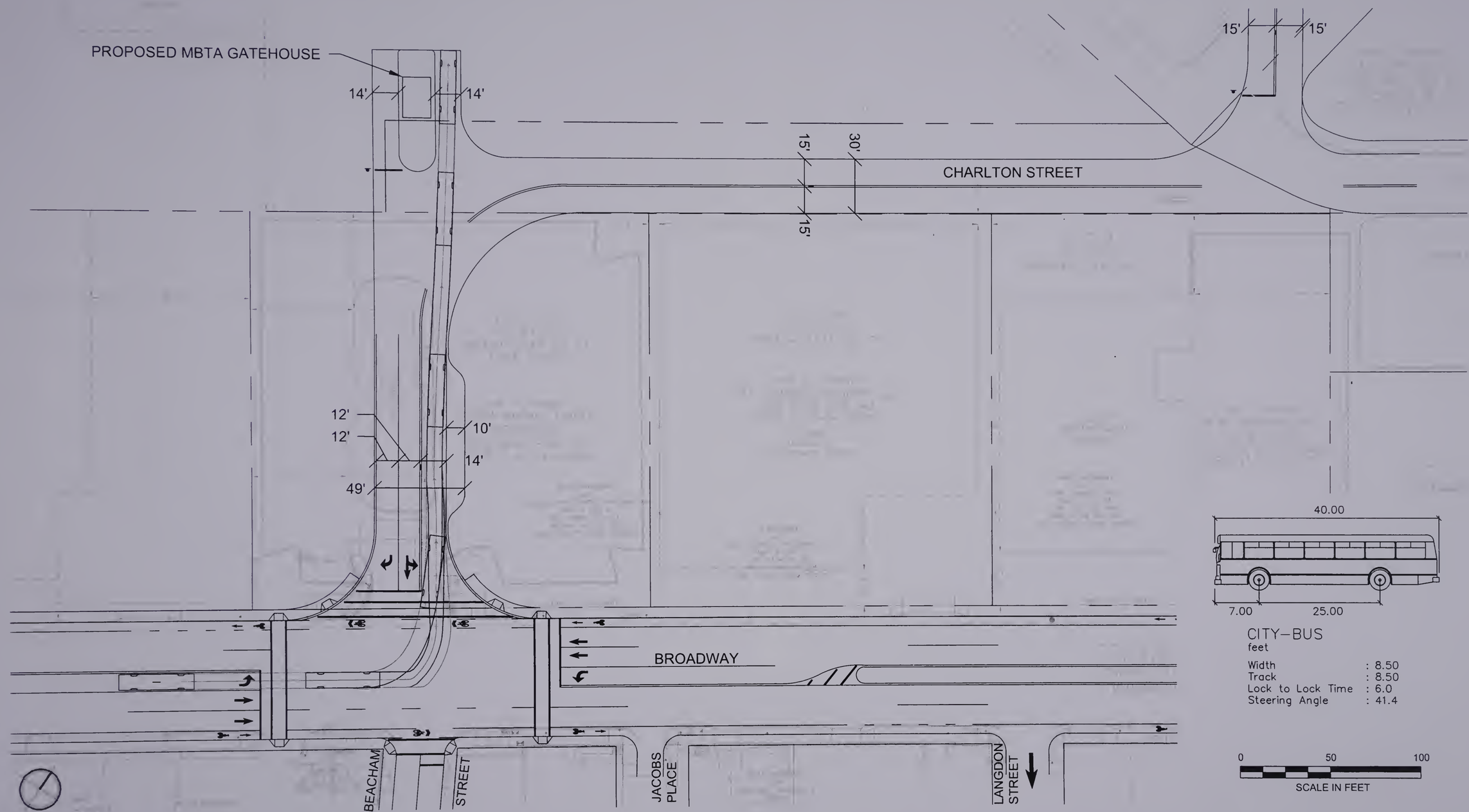


Figure 1-26
City Bus Entering MBTA Everett Shops from South
Source: Howard/Stein-Hudson Associates, Inc., 2015

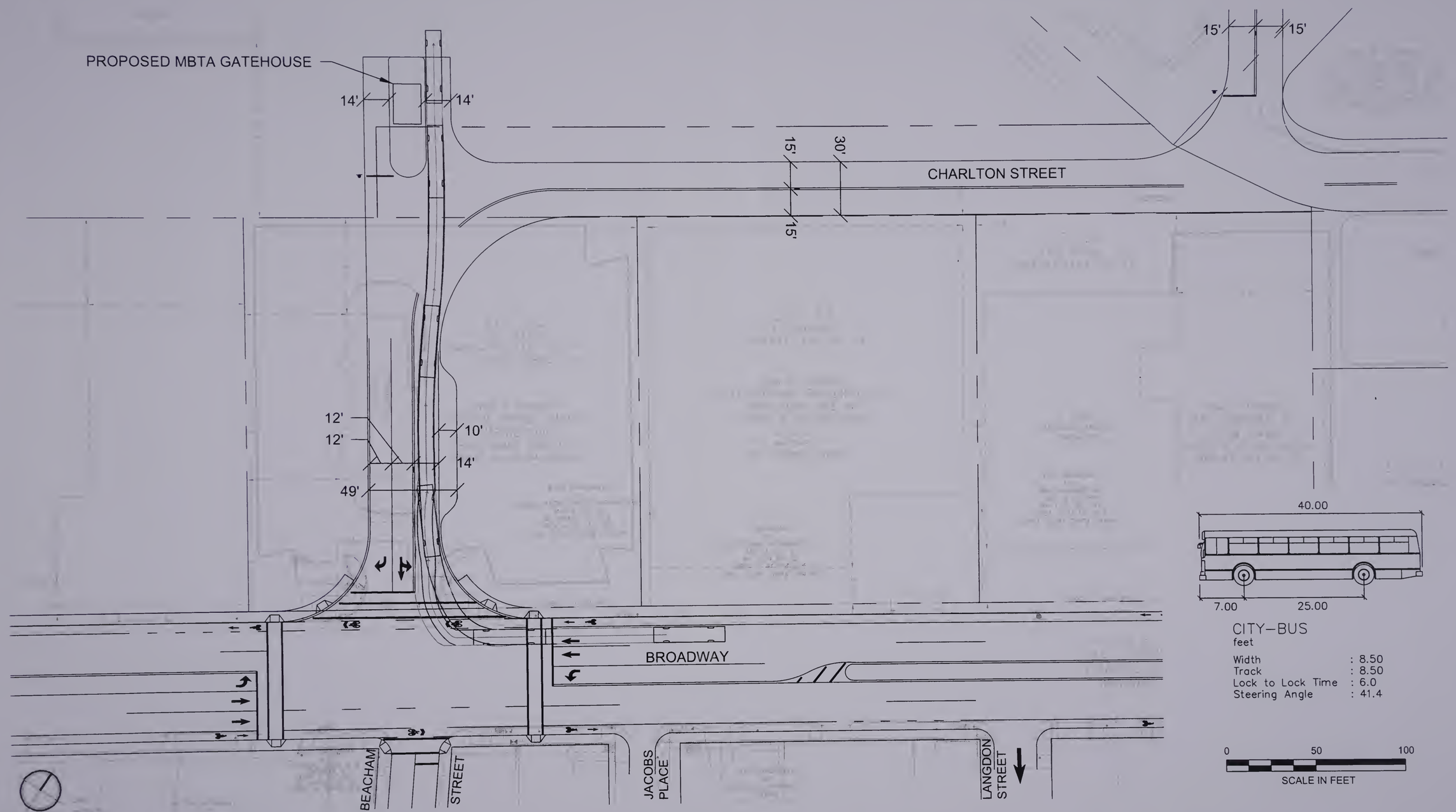


Figure 1-27
City Bus Entering MBTA Everett Shops from North
Source: Howard/Stein-Hudson Associates, Inc., 2015

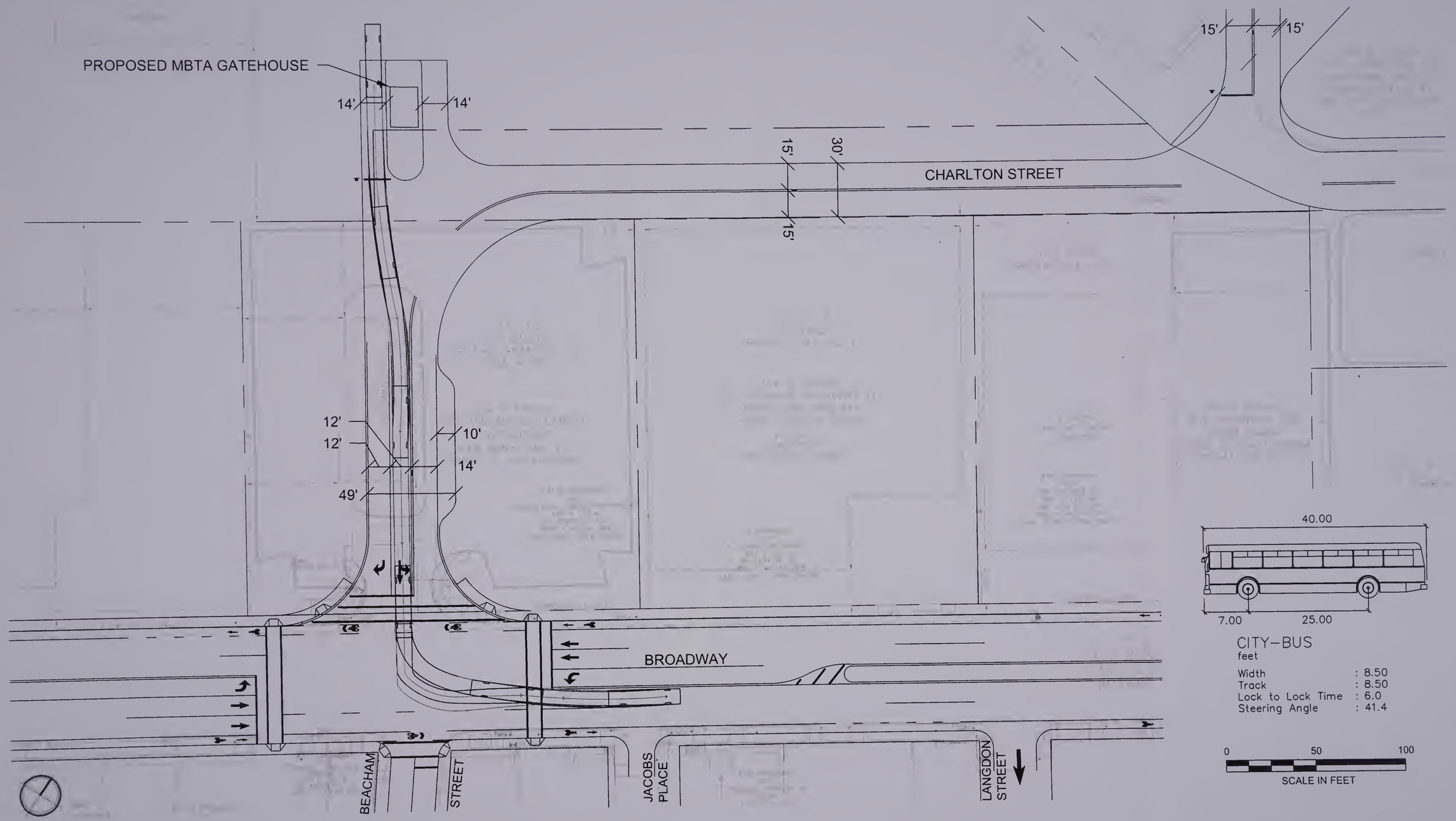


Figure 1-28
City Bus Exiting MBTA Everett Shops to North
Source: Howard/Stein-Hudson Associates, Inc., 2015

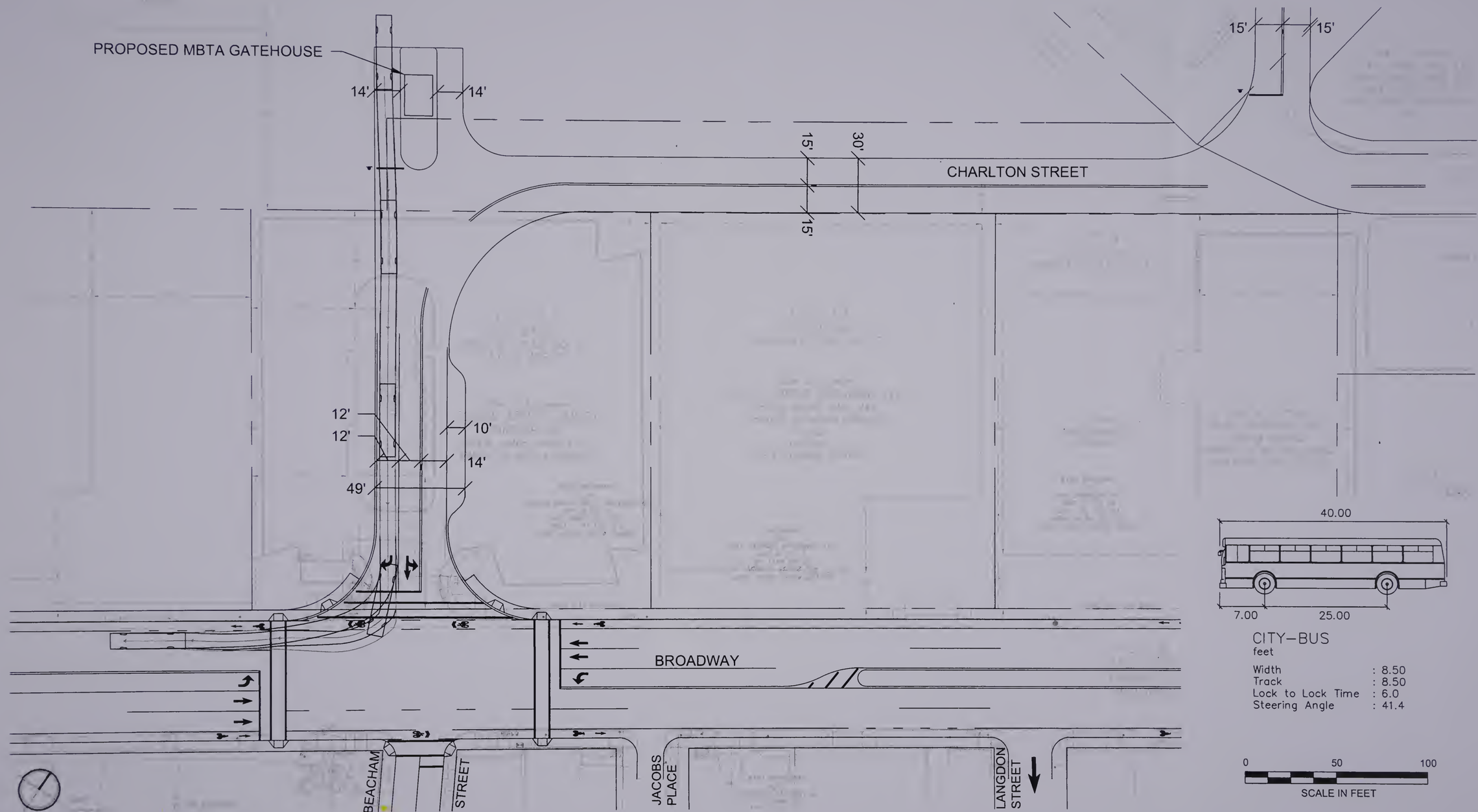


Figure 1-29
City Bus Exiting MBTA Everett Shops to South
Source: Howard/Stein-Hudson Associates, Inc., 2015

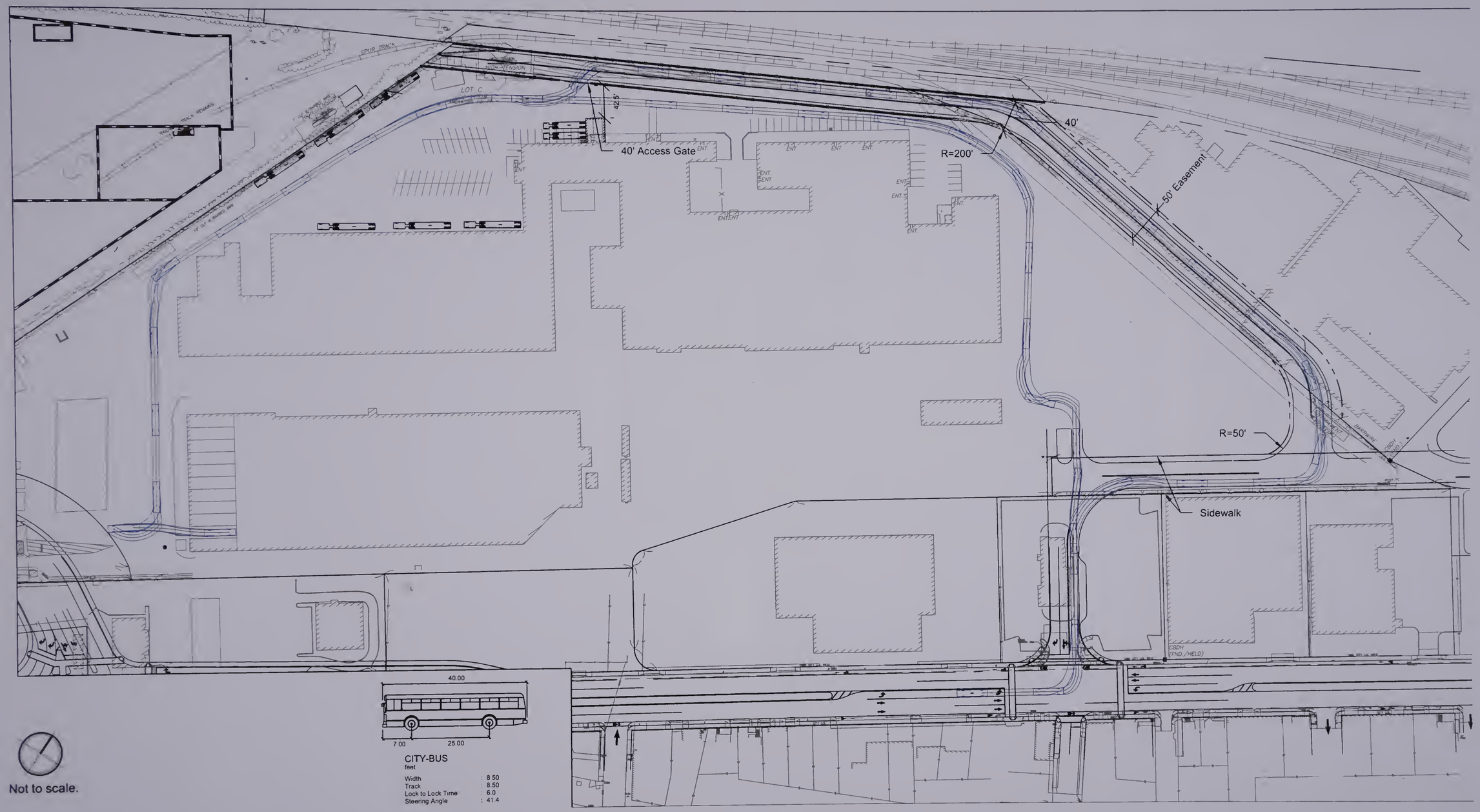


Figure 1-30
City Bus Moving through MBTA Everett Shops Site
Source: Howard/Stein-Hudson Associates, Inc., 2015

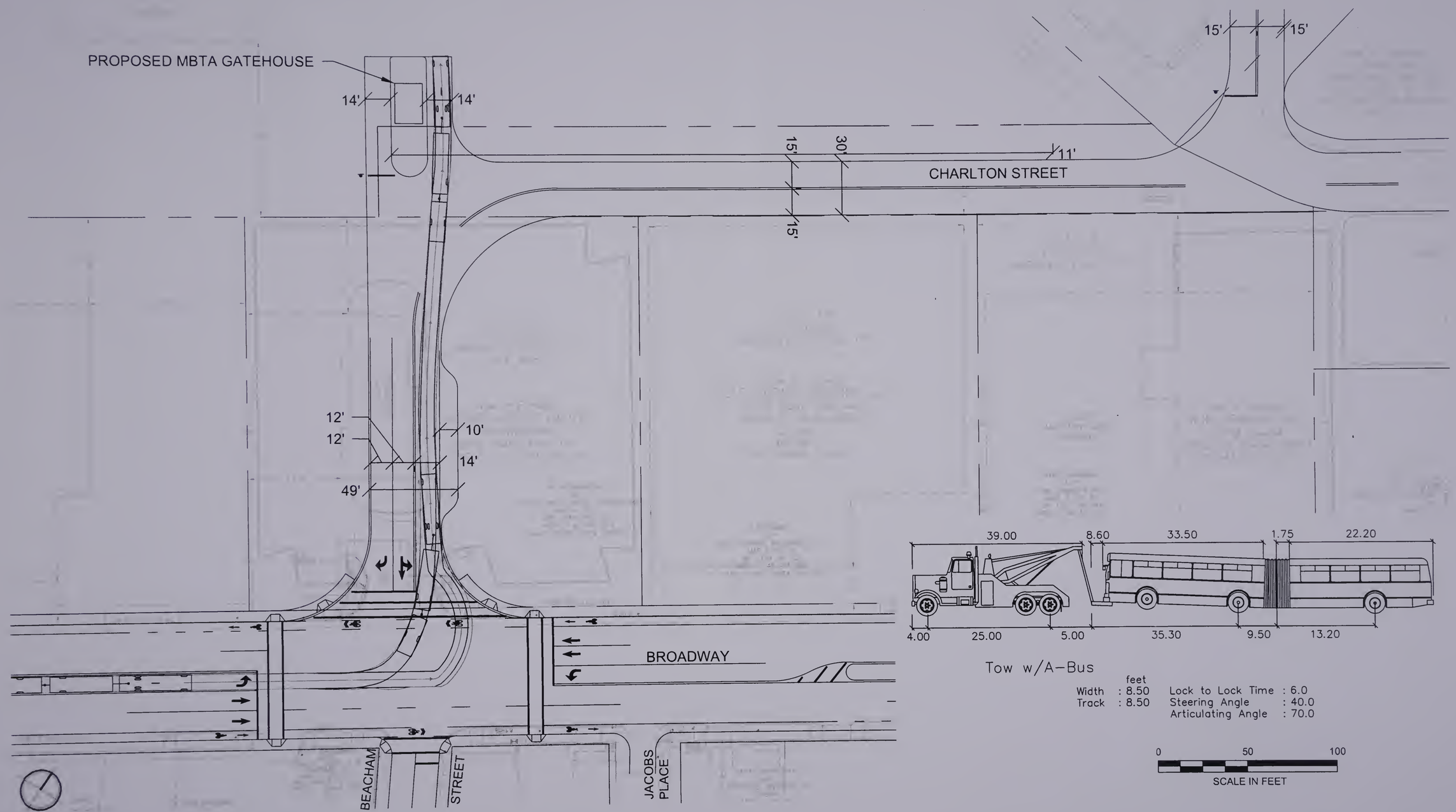
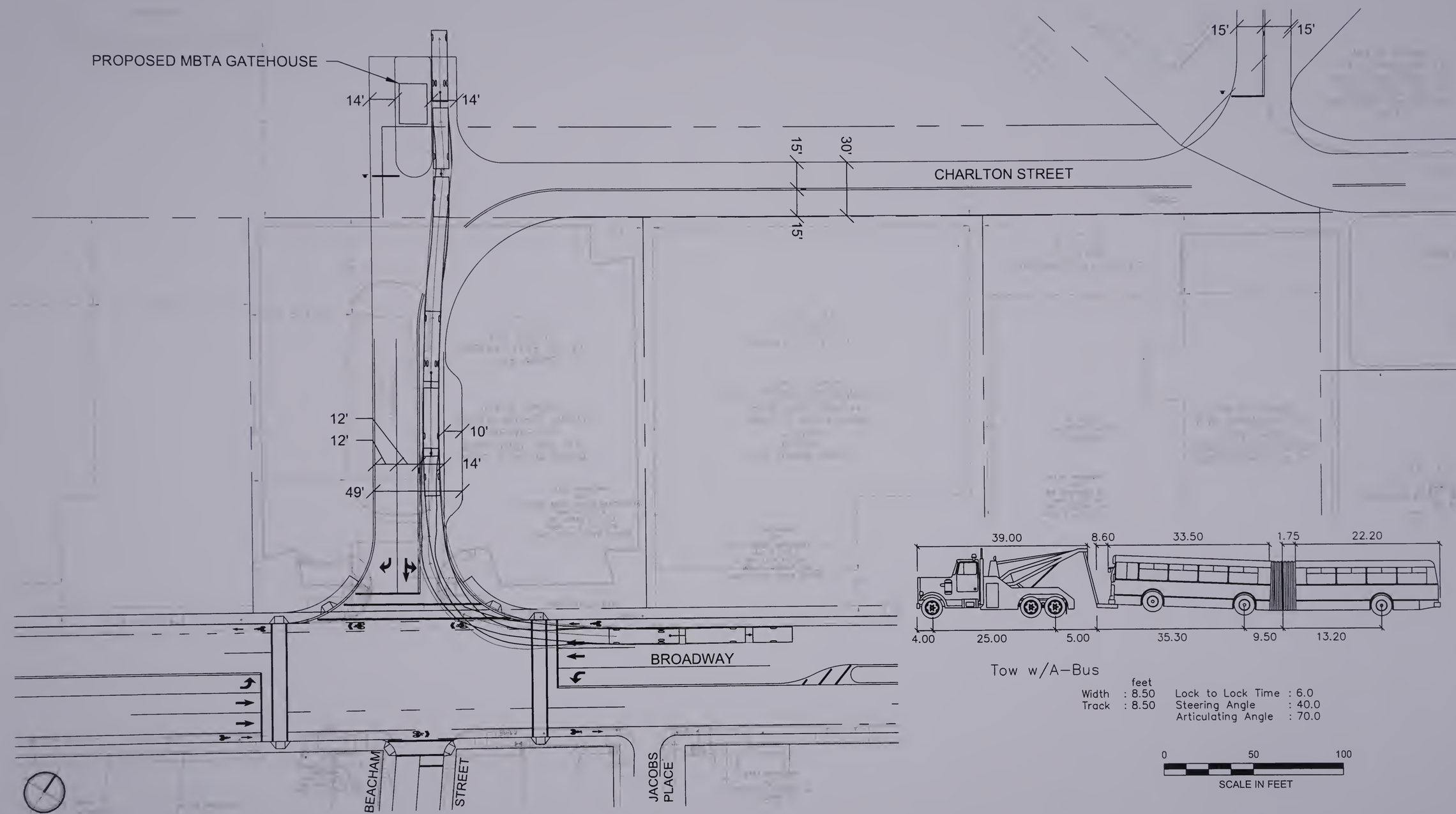


Figure 1-31
Tow Truck with Articulated Bus Entering MBTA Everett Shops from South
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Everett
Everett, Massachusetts

Figure 1-32
Tow Truck with Articulated Bus Entering MBTA Everett Shops from North
Source: Howard/Stein-Hudson Associates, Inc., 2015

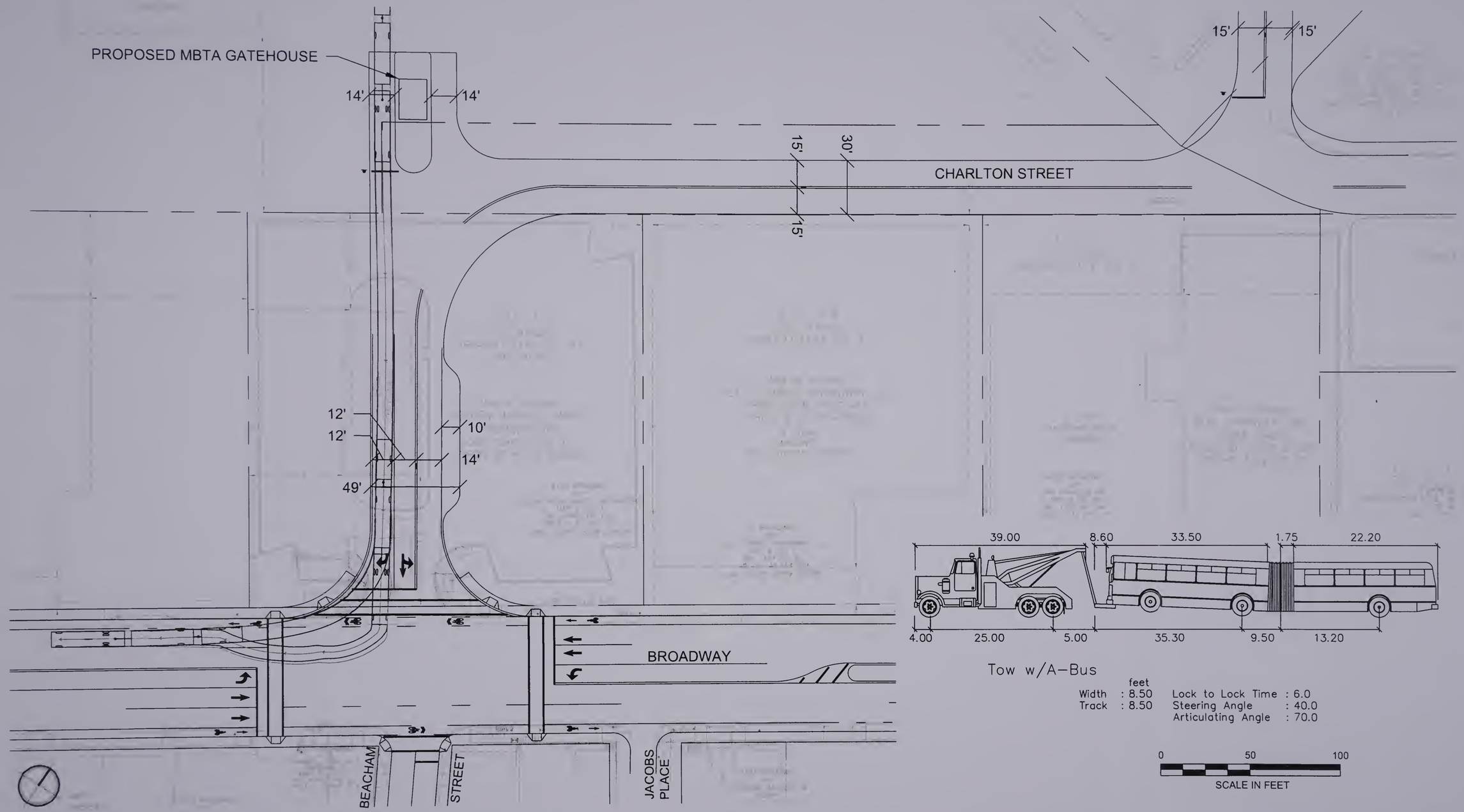


Figure 1-33
Tow Truck with Articulated Bus Exiting MBTA Everett Shops to North
Source: Howard/Stein-Hudson Associates, Inc., 2015

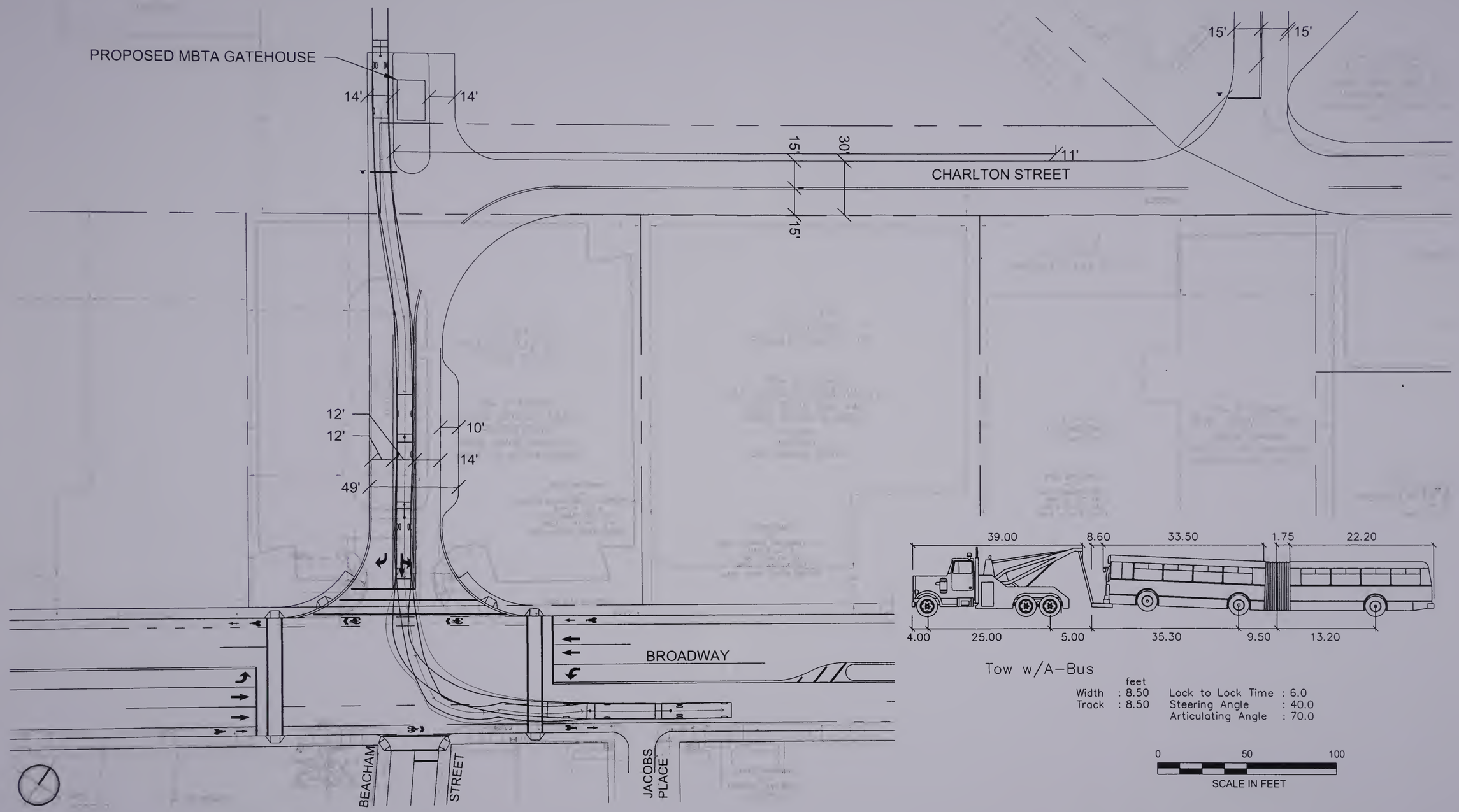


Figure 1-34
Tow Truck with Articulated Bus Exiting MBTA Everett Shops to South
Source: Howard/Stein-Hudson Associates, Inc., 2015

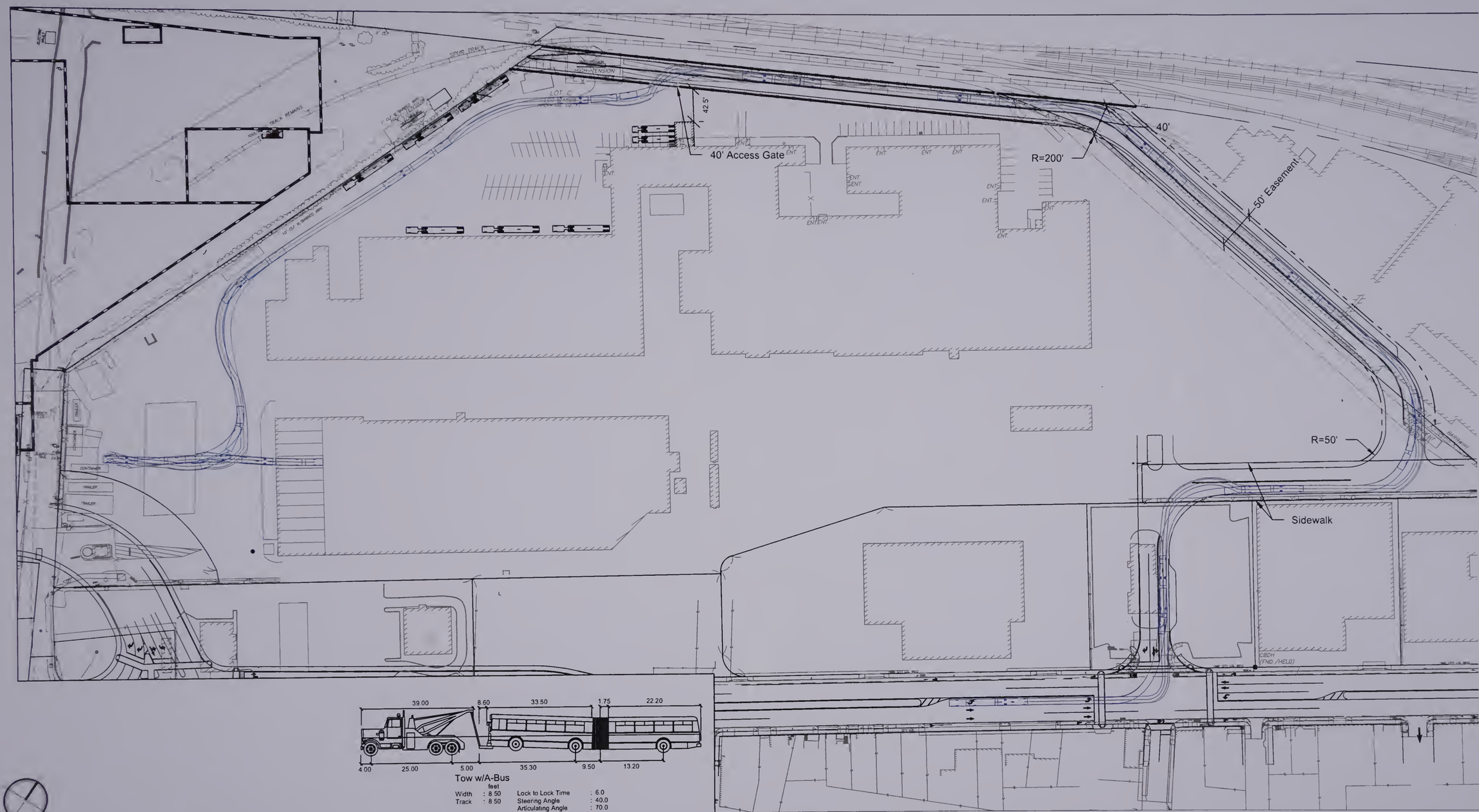


Figure 1-35
Tow Truck with Articulated Bus Moving through MBTA Everett Shops Site
Source: Howard/Stein-Hudson Associates, Inc., 2015

Chapter 2

IMPACTS TO MBTA OPERATIONS AND TRANSIT

CHAPTER 2: IMPACTS TO MBTA OPERATIONS AND TRANSIT

2.1 INTRODUCTION

As part of the SFEIR Certificate, the Proponent was asked to analyze the impacts of future regional growth and new Project trips on the MBTA Orange Line train service, and to specifically consider an operating subsidy to fund any additional train service that may be required to properly serve the projected ridership. This section provides a methodology for such analysis, the analysis of the Project's impact, and a proposed amount for an annual operating subsidy to be paid by the Proponent to the MBTA for Orange Line train service additions.

2.2 SUMMARY OF MBTA ORANGE LINE IMPACTS IDENTIFED IN THE SFEIR

As is discussed in Section 2.1.2 of the SFEIR, public transit access to the Project via the MBTA's Orange Line is a key component of the Project's transportation strategy to maximize patron and employee use of non-automobile travel modes. A significant proportion of Project patrons and employees are expected to travel on the Orange Line to connect with frequent and convenient shuttle bus services provided by the Proponent from the MBTA's Wellington and Malden Center Stations. Project employees are also expected to utilize one of several MBTA bus routes servicing Lower Broadway (Route 99) from Sullivan Square Station.

In order to confirm the capacity of the Orange Line to provide service to Project patrons and employees, the Proponent has prepared, in consultation with MassDOT, a detailed analysis of potential Project-related ridership on the Orange Line, which is included in this Section 2.2. This analysis demonstrates that the Orange Line can satisfactorily serve Project patrons and employees with modest adjustments to several headways (time between trains) through the addition of several train sets, and that the additional ridership will not adversely affect future Orange Line operations.

The analysis compares existing Orange Line operations, future (2023) operations including expected general ridership growth, and future (2023) operations with anticipated Project-related ridership added to general growth. The analysis applies the MBTA's Service Delivery Policy,[1] which quantifies the vehicle loading that the MBTA seeks to achieve by time of day

[1] Posted on MBTA website at https://www.mbta.com/uploadedfiles/About_the_T/T_Projects/T_Projects_List/2010ServiceDeliveryPolicy.pdf (June 2, 2010).

and by location in "core" (downtown heavily traveled areas) or "non-core" (outside downtown) portions of a transit line. The analysis shows that the Orange Line capacity will be sufficient to accommodate anticipated 2023 ridership in compliance with the MBTA's Service Delivery Policy in most but not all hours and parts of the line, with modest non-compliance with the MBTA's Service Delivery Policy during three particular weekday non-peak hours (9-10 a.m., 7-8 p.m., and 8-9 p.m.), two of which (9-10 a.m. and 7-8 p.m.) currently experience the same non-compliance. It is important to note that the analysis shows that the Orange Line has the actual capacity to serve its riders both now and as anticipated in 2023. However, in these hours, the Service Delivery Policy allows for only 81 passengers per Orange Line car in the core area (Back Bay to North Station), and for only 58 passengers per car (i.e., no standing passengers) in the non-core area that includes the stations serving the Project Site.

Orange Line future ridership projected without the Project would exceed these desired standard loadings by between 2-32 passengers per Orange Line car in the non-core area; the exceedance varies depending on the time period. With the addition of Project patrons and employees as future riders (the Project would add about 2-5 passengers per car), Orange Line ridership in the non-core area would continue not to comply with the Service Delivery Policy in the same three weekday non-peak hours in which the Orange Line service is currently not in compliance with the Service Delivery Policy. This would mean that some passengers would be standing for some amount of their trip but not that any train would be overcrowded or difficult to board. In the Build Condition (with the Project), ridership would also be in non-compliance with the Service Delivery Policy during one Saturday hour (12-1 p.m.), but by less than one additional passenger per train.

In summary, in nearly all time periods and locations, the Orange Line is projected to operate in the future within the Service Delivery Policy capacity standards with or without the Project. The Orange Line operations will continue not to comply with the Service Delivery Policy during certain hours in the No Build Condition and Build Condition and is projected not to comply with the Service Delivery Policy in one additional Saturday hour in the Build future Condition, unless headways are modestly adjusted by the addition of train sets. This analysis conservatively assumes that no improvements to Orange Line service and operations will occur prior to 2023. In fact, between now and 2023, the Orange Line will receive 152 new cars (a net addition of 32 cars or approximately 5 new train sets), which could allow the MBTA to more fully meet its Service Delivery Policy.

2.2.1 DATA SOURCES AND EXISTING ORANGE LINE SERVICE CHARACTERISTICS

Existing MBTA ridership data, collected by the Boston Region Metropolitan Planning Organization's ("MPO's") Central Transportation Planning Staff ("CTPS"), were used to conduct these Orange Line capacity analyses. The MPO collected CharlieCard data on Thursday, September 20, 2012; Saturday, September 22, 2012; and Sunday, September 23, 2012, providing counts of hourly boardings and

alightings at each Orange Line station for each of those dates.[2] This data was provided in Appendix B of the Proponent's DEIR.

The Project will be proximate to Orange Line stops at Sullivan Square Station (approximately 1.2 miles from the Project Site), Wellington Station (approximately 1.5 miles), and Malden Center Station (approximately 3.1 miles). In addition, the new Assembly Square Station (approximately 1.6 miles from the Project Site via local roads) opened for service in September 2014. The Proponent will institute shuttle bus service to transport patrons and employees between Wellington and Malden Center Stations and the Project. Several existing MBTA bus routes provide a public transportation connection between the Sullivan Square Station and the Project Site.

The MBTA's Service Delivery Policy defines the key performance characteristics ("Service Objectives") of quality transit services and provides quantifiable Service Standards for meeting Service Objectives in the areas of accessibility, reliability, safety, comfort, and cost effectiveness. With respect to the Service Objectives of Safety and Comfort, the Service Delivery Policy outlines maximum desirable vehicle occupancy thresholds, or loading standards, which vary depending on time of day, represented by a ratio of the number of patrons compared to the number of seats in a car.

As provided in the Service Delivery Policy, during the early a.m. period (6:00 a.m. – 7:00 a.m.), the a.m. peak period (7:00 a.m. – 9:00 a.m.), the midday school period (1:30 p.m. – 4:00 p.m.) and the p.m. peak period (4:00 p.m. – 6:00 p.m.), a passenger load equaling 225% of the number of seats in a car is considered an acceptable load; during these periods it is expected that some passengers will be standing but that the MBTA will provide sufficient service so that vehicles are not excessively crowded. MBTA Orange Line cars each have 58 seats; therefore, a passenger load of 131 passengers per car is considered an acceptable load during these peak periods. During remaining hours of the day, or off-peak periods, a passenger load equaling 140% of the number of seats (or 81 passengers per car in the case of Orange Line cars) is considered acceptable within the "core" areas of a transit line (for the Orange Line, between North Station and Back Bay Station), and a passenger load equaling 100% of the number of seats (or 58 passengers per car in the case of Orange Line cars) is considered acceptable outside of the core area (for the Orange Line north of the core, between North Station and Oak Grove). To determine whether a service has an acceptable level of loading, the vehicle loads

[2] Because Orange Line riders do not go through turnstiles when transferring from the Red Line or the Green Line, precise boarding counts for the Orange Line are not generally available. Accurate alighting data is also not available. The MPO's September 2012 data, therefore, represents the most recent accurate ridership counts available for the Orange Line.

are averaged over specified periods of time. The Service Delivery Policy recognizes that due to scheduling constraints and peaking characteristics, some individual trips may exceed the load levels expressed in the standards.

The Service Delivery Policy also establishes minimum frequency of service (minimum headways, or number of minutes between scheduled trips on a route) standards sufficient to achieve the Service Objective of Accessibility. On heavily used services, the minimum frequency of service levels may not be sufficient to meet customer demand. The Service Delivery Policy states that when ridership levels as measured against the loading standards (the Vehicle Loading Standard described in the preceding paragraph) indicate that additional service is warranted, the MBTA will increase frequency of service to provide a sufficient number of vehicles to accommodate passenger demand.

For all the heavy rail transit lines, the Service Delivery Policy's minimum frequency of service standard is 10-minute headways in a.m. and p.m. (rush hour) peak periods and 15-minute headways in other weekday periods and all day on Saturdays and Sundays. Currently, the Orange Line is scheduled to operate on weekdays at 6-minute headways during peak rush hours, 8-minute headways during mid-day (approximately 9:00 a.m. to 3:30 p.m.) and 10-minute headways during evening and late-night periods. On Saturdays, the Orange Line is currently scheduled to operate at 8-minute headways during the p.m. peak period (approximately 6:30 p.m. to 8:00 p.m.) and at 10-minute headways during other periods. Table 2-1 shows the hourly capacity of the Orange Line during the peak and off-peak hours within and outside the core area.

Table 2-1: Orange Line Hourly Passenger Capacities Based on Headway and Area

Headway	Peak Hours – Core and Non-core (passengers/hour)*	Off-Peak Hours – Core Area (passengers/hour)*	Off-Peak Hours – Non-core Area (passengers/hour)*
5 minutes	9,432	5,832	4,176
6 minutes	7,860	4,860	3.480
8 minutes	5,895	3,645	2,610
10 minutes	4,716	2,916	2,088

*Based on 58-seat cars per train

2.2.2 ANALYSIS RESULTS: PEAK CORE AND NON-CORE LOADPOINTS

Ridership and capacity were analyzed in the Existing (2012), No Build (2023), and Build (2023) conditions. As requested by MassDOT following the filing of the FEIR, and previously shared with and reviewed by MassDOT and the MBTA, an analysis

was performed at two locations: the peak core-area loadpoint between Downtown Crossing and State stations and the peak non-core loadpoint north of downtown Boston between North Station and Community College station. Core-area stations are defined as those stations between Back Bay and North Station (inclusive), while non-core stations are those located north of North Station or south of Back Bay station. As noted previously, core-area stations have an off-peak "policy capacity" of 140% of seats, while non-core stations have an off-peak policy capacity of 100% of seats.

2.2.2.1 EXISTING CONDITIONS

To assess whether the MBTA Orange Line is over capacity at any time over the course of a typical weekday or Saturday in the Existing (2012) Condition, a full weekday and Saturday of MBTA ridership data was analyzed for the loadpoints between Downtown Crossing and State stations and between North Station and Community College. As shown in Figure 2-1 and Figure 2-2, the Orange Line does not exceed capacity between Downtown Crossing and State stations on average during any hour throughout a typical weekday or Saturday.

However, as shown in Figure 2-3, existing ridership (as measured in 2012) exceeds capacity based on Service Delivery Policy loading standards between North Station and Community College during the 9:00 a.m. to 10:00 a.m. (southbound) and 7:00 p.m. to 8:00 p.m. hour (northbound) on weekdays. Outside of the core area, the policy capacity is 100% of total seats (in contrast to 140% within the core area), and 2012 ridership occupying 142.5% and 110.0% of total seats during the 9:00-10:00 a.m. and the 7:00-8:00 p.m. hours, respectively, therefore exceeds the capacity standard (see Table 2-1). During these hours, current operations in the non-core area do not meet the loading standards of the Service Delivery Policy.

As shown in Figure 2-4, existing ridership does not exceed capacity at any time on a typical Saturday. Tables 2-2, 2-3, 2-4, and 2-5 show the existing ridership compared to policy capacity at each analyzed loadpoint.

Table 2-2: Existing (2012) Conditions Ridership and Capacity Summary, Core Area, Weekday

Time	Core Policy Capacity	Head way (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	463	15.9%	1,069	36.7%
6-7 a.m.	3,645	8	1,851	50.8%	3,075	84.4%
7-8 a.m.	7,860	6	3,452	43.9%	5,674	72.2%
8-9 a.m.	7,860	6	4,759	60.5%	6,884	87.6%
9-10 a.m.	3,645	8	1,927	52.9%	3,614	99.1%
10-11 a.m.	3,645	8	1,630	44.7%	2,397	65.8%
11 a.m. – 12 p.m.	3,645	8	1,686	46.3%	1,947	53.4%
12-1 p.m.	3,645	8	1,815	59.8%	2,065	56.7%
1-2 p.m.	4,770	8	2,048	42.9%	2,078	43.6%
2-3 p.m.	5,895	8	2,552	43.3%	2,563	43.5%
3-4 p.m.	6,737	7	3,710	55.1%	2,771	41.1%
4-5 p.m.	7,860	6	5,329	67.8%	3,728	47.4%
5-6 p.m.	7,860	6	6,393	81.3%	4,472	56.9%
6-7 p.m.	4,770	8	3,933	82.5%	2,124	44.5%
7-8 p.m.	2,916	10	2,437	83.6%	1,423	48.8%
8-9 p.m.	2,916	10	2,063	70.7%	1,233	42.3%
9-10 p.m.	2,916	10	1,503	51.5%	936	32.1%
10-11 p.m.	2,916	10	1,102	37.8%	1053	36.1%
11 p.m. – 12 a.m.	2,916	10	923	31.7%	458	15.7%
12-1 a.m.	2,916	10	257	8.8%	114	3.9%

Table 2-3: Existing (2012) Conditions Ridership and Capacity Summary, Non-core Area, Weekday

Time	Non-core Policy Capacity	Headway (min)	Ridership between North Station - Community College			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	306	14.7%	959	45.9%
6-7 a.m.	4,253	8	1,083	25.5%	2,495	58.7%
7-8 a.m.	7,860	6	1,680	21.4%	5,230	66.5%
8-9 a.m.	7,860	6	1,773	22.6%	6,872	87.4%
9-10 a.m.	2,610	8	1,238	47.4%	3,720	142.5%
10-11 a.m.	2,610	8	1,022	39.2%	2,092	80.2%
11 a.m. – 12 p.m.	2,610	8	1,124	43.1%	1,801	69.0%
12-1 p.m.	2,610	8	1,283	49.2%	1,724	66.1%
1-2 p.m.	4,253	8	1,636	38.5%	1,647	38.7%
2-3 p.m.	5,895	8	2,069	35.1%	1,797	30.5%
3-4 p.m.	6,737	7	3,020	44.8%	1,901	28.2%
4-5 p.m.	7,860	6	4,762	60.6%	1,976	25.1%
5-6 p.m.	7,860	6	6,075	77.3%	2,297	29.2%
6-7 p.m.	4,253	8	3,727	87.6%	1,193	28.1%
7-8 p.m.	2,088	10	2,297	110.0%	797	38.2%
8-9 p.m.	2,088	10	1,936	92.7%	814	39.0%
9-10 p.m.	2,088	10	1,408	67.4%	542	26.0%
10-11 p.m.	2,088	10	1,254	60.1%	401	19.2%
11 p.m. – 12 a.m.	2,088	10	859	41.1%	183	8.8%
12-1 a.m.	2,088	10	261	12.5%	68	3.3%

Shading indicates Service Delivery Policy capacity is exceeded.

Table 2-4: Existing (2012) Conditions Ridership and Capacity Summary, Core Area, Saturday

Time	Core Policy Capacity	Headway (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	463	15.9%	387	13.3%
6-7 a.m.	2,916	10	362	12.4%	783	26.9%
7-8 a.m.	2,916	10	648	22.2%	1,198	40.9%
8-9 a.m.	2,916	10	1,071	36.7%	1,271	43.6%
9-10 a.m.	2,916	10	989	33.9%	1,526	52.3%
10-11 a.m.	2,916	10	1,228	42.1%	1,495	51.3%
11 a.m. – 12 p.m.	2,916	10	1,567	53.7%	1,614	55.3%
12-1 p.m.	2,916	10	1,619	55.5%	1,726	59.2%
1-2 p.m.	2,916	10	1,660	56.9%	1,621	55.6%
2-3 p.m.	2,916	10	1,747	59.9%	1,636	56.1%
3-4 p.m.	3,240	9	1,923	59.4%	1,819	56.1%
4-5 p.m.	3,645	8	2,029	55.7%	1,790	49.1%
5-6 p.m.	3,645	8	1,892	51.9%	1,925	52.8%
6-7 p.m.	3,240	9	1,565	48.3%	1,405	43.4%
7-8 p.m.	2,916	10	1,326	45.5%	1,187	40.7%
8-9 p.m.	2,916	10	1,306	44.8%	981	33.6%
9-10 p.m.	2,916	10	1,186	40.7%	900	30.9%
10-11 p.m.	2,916	10	1,390	47.7%	847	29.0%
11 p.m. – 12 a.m.	2,916	10	1,154	39.6%	667	22.9%
12-1 a.m.	2,916	10	532	18.2%	286	9.8%

Table 2-5: Existing (2012) Conditions Ridership and Capacity Summary, Non-core Area, Saturday

Time	Non-core Policy Capacity	Headway (min)	Ridership between North Station – Community College			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	145	6.9%	253	12.1%
6-7 a.m.	2,088	10	245	11.7%	615	29.5%
7-8 a.m.	2,088	10	407	19.5%	900	43.1%
8-9 a.m.	2,088	10	873	41.8%	1,039	49.8%
9-10 a.m.	2,088	10	526	25.2%	1,563	74.9%
10-11 a.m.	2,088	10	657	31.5%	1,379	66.0%
11 a.m. – 12 p.m.	2,088	10	801	38.4%	1,729	82.8%
12-1 p.m.	2,088	10	865	41.4%	1,758	84.2%
1-2 p.m.	2,088	10	849	40.7%	1,466	70.2%
2-3 p.m.	2,088	10	1,063	50.9%	1,416	67.8%
3-4 p.m.	2,320	9	1,336	57.6%	1,415	61.0%
4-5 p.m.	2,610	8	1,545	59.2%	1,306	50.0%
5-6 p.m.	2,610	8	1,669	63.9%	1,088	41.7%
6-7 p.m.	2,320	9	1,451	62.5%	853	36.8%
7-8 p.m.	2,088	10	1,279	61.3%	785	37.6%
8-9 p.m.	2,088	10	1,122	53.7%	601	28.8%
9-10 p.m.	2,088	10	1,122	53.7%	480	23.0%
10-11 p.m.	2,088	10	1,209	57.9%	496	23.8%
11 p.m. – 12 a.m.	2,088	10	1,111	53.2%	316	15.1%
12-1 a.m.	2,088	10	539	25.8%	130	6.2%

2.2.2.2 NO BUILD CONDITIONS

In order to assess how general ambient growth in ridership impacts Orange Line service, a future No Build year of 2023 (which is the design year for transportation impact analysis for the Project generally) was set. An assumed ridership growth rate of 1% per year was determined using the Boston Region MPO's Long-range Transportation Plan, dated September 22, 2011. This growth rate was applied to all 2012 existing ridership data to determine approximate ridership for 2023, assuming the Project is not constructed.

Between the present and 2023, the Orange Line will also be improved by the purchase of new cars, a procurement that was finalized as of October 22, 2014. This procurement will deliver 152 Orange Line cars, replacing the entire existing fleet of 120 cars with 152 new Orange Line vehicles (a net addition of 32 new cars comprising approximately 5 new train sets). Prior Orange Line signal improvements completed in 2008 were intended to allow for improved headways on the Orange Line once additional cars/trains became available. The new Orange Line fleet is expected to be in service before the 2023 design year used for this analysis. Since existing conditions on the Orange Line, for example, in the section between North Station and Community College as discussed above, already do not meet Service Delivery Policy loading standards, and that capacity shortfall will only be exacerbated by further ridership growth projected to occur, it is expected that the MBTA will use this Orange Line fleet expansion to address the existing capacity issues by increasing service to some degree on both weekdays and weekends. It should be noted that signal improvements may have a significant impact in operations, reducing headways throughout the day even before accounting for any added train sets. However, for this analysis, it was assumed that all periods would have the same headways as the present, except in the weekday a.m. and p.m. peak hours, when headways are scheduled to be reduced from one train every six minutes to one train every five minutes by the MBTA upon the delivery of the new train sets. This adjustment was agreed upon by the MBTA's Service Planning Department. No other periods are planned to have headways adjusted as a result of the purchase of new train sets.

As shown in Figure 2-5 and Figure 2-6, the Orange Line exceeds capacity during the 9:00–10:00 a.m. period in the southbound direction in the No Build Condition. While ridership is significantly lower during this period than the 8:00–9:00 a.m. period, the peak period, as defined by the MBTA's Service Delivery Policy, ends at 9:00 a.m. As a result, the

policy capacity is reduced from 225% of seats to 140% of seats. Ridership does not exceed capacity on Saturdays within the core area. Outside the core area, ridership exceeds policy capacity during the 9:00–10:00 a.m. period in the southbound direction and during the 7:00–8:00 p.m. and 8:00–9:00 p.m. periods in the northbound direction on weekdays, as shown in Figure 2-7 and Figure 2-8. During these off-peak periods, the MBTA's policy capacity is 100% of seats, as opposed to 140% of seats during off-peak periods in the core area and 225% of seats during peak periods. Projected No Build ridership and capacity are shown in Tables 2-6, 2-7, 2-8, and 2-9.

Table 2-6: No Build (2023) Conditions Ridership and Capacity Summary, Core Area, Weekday

Time	Core Policy Capacity	Head way (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	517	17.7%	1,193	40.9%
6-7 a.m.	3,888	7.5	2,065	53.1%	3,431	88.2%
7-8 a.m.	9,432	5	3,851	40.8%	6,330	67.1%
8-9 a.m.	9,432	5	5,309	56.3%	7,680	81.4%
9-10 a.m.	3,645	8	2,150	59.0%	4,032	110.6%
10-11 a.m.	3,645	8	1,819	43.7%	2,674	64.2%
11 a.m. – 12 p.m.	3,645	8	1,881	45.2%	2,172	52.1%
12-1 p.m.	3,645	8	2,025	48.6%	2,304	55.3%
1-2 p.m.	4,770	8	2,285	41.9%	2,318	42.5%
2-3 p.m.	5,895	8	2,847	42.3%	2,859	42.4%
3-4 p.m.	7,255	6.5	4,139	52.7%	3,092	39.3%
4-5 p.m.	9,432	5	5,945	63.0%	4,159	44.1%
5-6 p.m.	9,432	5	7,132	75.6%	4,989	52.9%
6-7 p.m.	5,088	7.5	4,388	86.2%	2,370	46.6%
7-8 p.m.	2,916	10	2,719	93.2%	1,558	54.4%
8-9 p.m.	2,916	10	2,302	78.9%	1,376	47.2%
9-10 p.m.	2,916	10	1,677	57.5%	1,044	35.8%
10-11 p.m.	2,916	10	1,229	42.2%	1,175	40.3%
11 p.m. – 12 a.m.	2,916	10	1,030	35.3%	511	17.5%
12-1 a.m.	2,916	10	287	9.8%	127	4.4%

Shading indicates Service Delivery Policy capacity is exceeded.

Table 2-7: No Build (2023) Conditions Ridership and Capacity Summary, Non-core Area, Weekday

Time	Non-core Policy Capacity	Head way (min)	Ridership between North Station- Community College			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	341	16.4%	1,070	51.2%
6-7 a.m.	4,536	7.5	1,208	26.6%	2,784	61.4%
7-8 a.m.	9,432	5	1,874	19.9%	5,835	61.9%
8-9 a.m.	9,432	5	1,978	21.0%	7,667	81.3%
9-10 a.m.	2,610	8	1,381	52.9%	4,150	159.0%
10-11 a.m.	2,610	8	1,140	43.7%	2,334	89.4%
11 a.m. – 12 p.m.	2,610	8	1,254	48.0%	2,009	77.0%
12-1 p.m.	2,610	8	1,431	54.8%	1,923	73.7%
1-2 p.m.	4,253	8	1,825	42.9%	1,838	42.9%
2-3 p.m.	5,895	8	2,308	39.2%	2,005	34.0%
3-4 p.m.	7,255	6.5	3,369	46.4%	2,121	29.2%
4-5 p.m.	9,432	5	5,313	56.3%	2,205	23.4%
5-6 p.m.	9,432	5	6,778	71.9%	2,563	27.2%
6-7 p.m.	4,536	7.5	4,158	91.7%	1,331	29.3%
7-8 p.m.	2,088	10	2,563	122.7%	889	42.6%
8-9 p.m.	2,088	10	2,160	103.4%	908	43.5%
9-10 p.m.	2,088	10	1,571	75.2%	605	29.0%
10-11 p.m.	2,088	10	1,399	67.0%	447	21.4%
11 p.m. – 12 a.m.	2,088	10	958	45.9%	204	9.8%
12-1 a.m.	2,088	10	291	13.9%	76	3.6%

Shading indicates Service Delivery Policy capacity is exceeded.

Table 2-8: No Build (2023) Conditions Ridership and Capacity Summary, Core Area, Saturday

Time	Core Policy Capacity	Head way (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	517	17.7%	432	14.8%
6-7 a.m.	2,916	10	404	13.9%	874	30.0%
7-8 a.m.	2,916	10	723	24.8%	1,330	45.6%
8-9 a.m.	2,916	10	1,195	41.0%	1,418	48.6%
9-10 a.m.	2,916	10	1,103	37.8%	1,703	58.4%
10-11 a.m.	2,916	10	1,370	47.0%	1,668	57.2%
11 a.m. – 12 p.m.	2,916	10	1,748	60.0%	1,801	61.8%
12-1 p.m.	2,916	10	1,806	61.9%	1,926	66.0%
1-2 p.m.	2,916	10	1,852	63.5%	1,808	62.0%
2-3 p.m.	2,916	10	1,949	66.8%	1,825	62.6%
3-4 p.m.	3,240	9	2,145	66.2%	2,029	62.6%
4-5 p.m.	3,645	8	2,264	62.1%	1,997	54.8%
5-6 p.m.	3,645	8	2,111	57.9%	2,148	58.9%
6-7 p.m.	3,240	9	1,746	53.9%	1,568	48.4%
7-8 p.m.	2,916	10	1,479	50.7%	1,324	45.4%
8-9 p.m.	2,916	10	1,457	50.0%	1,094	37.5%
9-10 p.m.	2,916	10	1,323	45.4%	1,004	34.4%
10-11 p.m.	2,916	10	1,551	53.2%	948	32.4%
11 p.m. – 12 a.m.	2,916	10	1,287	44.2%	744	25.5%
12-1 a.m.	2,916	10	594	20.4%	319	10.9%

Table 2-9: No Build (2023) Conditions Ridership and Capacity Summary, Non-core Area, Saturday

Time	Non-core Policy Capacity	Head way (min)	Ridership between North Station – Community College			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	162	7.7%	282	13.5%
6-7 a.m.	2,088	10	273	11.8%	686	29.6%
7-8 a.m.	2,088	10	454	17.4%	1,004	38.5%
8-9 a.m.	2,088	10	974	37.3%	1,159	44.4%
9-10 a.m.	2,088	10	587	22.5%	1,744	66.8%
10-11 a.m.	2,088	10	733	28.1%	1,539	58.9%
11 a.m. – 12 p.m.	2,088	10	894	34.2%	1,929	73.9%
12-1 p.m.	2,088	10	865	37.0%	1,961	75.1%
1-2 p.m.	2,088	10	947	36.3%	1,636	62.7%
2-3 p.m.	2,088	10	1,186	45.4%	1,580	60.5%
3-4 p.m.	2,320	9	1,491	57.1%	1,579	60.5%
4-5 p.m.	2,610	8	1,724	66.0%	1,457	55.8%
5-6 p.m.	2,610	8	1,862	71.3%	1,214	46.5%
6-7 p.m.	2,320	9	1,619	69.8%	952	41.0%
7-8 p.m.	2,088	10	1,427	68.3%	876	41.9%
8-9 p.m.	2,088	10	1,252	60.0%	671	32.1%
9-10 p.m.	2,088	10	1,252	60.0%	536	25.6%
10-11 p.m.	2,088	10	1,349	64.6%	553	26.5%
11 p.m. – 12 a.m.	2,088	10	1,240	59.4%	353	16.9%
12-1 a.m.	2,088	10	601	28.8%	145	6.9%

2.2.2.3 BUILD CONDITIONS

Similar to the Existing and No Build Conditions, a full day of ridership data (weekday and Saturday) was analyzed for the peak core area loadpoint between Downtown Crossing and State stations and the peak northerly non-core area loadpoint between North Station and Community College for the Build (2023) Condition. To estimate Build ridership, expected Project patron and employee trips were added to No Build ridership.

As shown in Figure 2-9 and Figure 2-10, the Project trips do not cause the Orange Line to exceed capacity within the core area at any point throughout a typical weekday or Saturday. Outside the core area, weekday Project trips do not cause any additional periods to exceed capacity, as shown in Figure 2-11 and Figure 2-12. As in the No Build (2023) Condition, on a typical weekday, ridership exceeds capacity during the 9:00-10:00 a.m. period in the southbound direction in the core area, and exceeds capacity during the 9:00-10:00 a.m. period (southbound), the 7:00-8:00 p.m. period (northbound), and the 8:00-9:00 p.m. period (northbound) in the non-core area. On a typical Saturday, additional Project trips cause the Orange Line to exceed capacity in the southbound direction during the 12:00-1:00 p.m. period; however, capacity is exceeded by just five passengers over the course of an hour, which equates to less than one passenger per train. Build (2023) Condition ridership and capacity are shown in Tables 2-10, 2-11, 2-12, and 2-13.

Table 2-10:Build (2023) Conditions Ridership and Capacity Summary, Core Area, Weekday

Time	Core Policy Capacity	Headway (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	569	19.5%	1,228	42.1%
6-7 a.m.	3,888	7.5	2,120	54.5%	3,468	89.2%
7-8 a.m.	9,432	5	3,887	41.2%	6,369	67.5%
8-9 a.m.	9,432	5	5,338	56.6%	7,729	81.9%
9-10 a.m.	3,645	8	2,204	60.5%	4,136	113.5%
10-11 a.m.	3,645	8	1,885	51.7%	2,797	76.7%
11 a.m. – 12 p.m.	3,645	8	1,965	53.9%	2,297	63.0%
12-1 p.m.	3,645	8	2,121	58.2%	2,439	66.9%
1-2 p.m.	4,770	8	2,397	50.3%	2,468	51.7%
2-3 p.m.	5,895	8	2,987	50.7%	3,018	51.2%
3-4 p.m.	6,737	6.5	4,312	59.4%	3,233	44.6%
4-5 p.m.	9,432	5	6,056	64.2%	4,296	45.5%
5-6 p.m.	9,432	5	7,241	76.8%	5,092	54.0%
6-7 p.m.	5,088	7.5	4,530	89.0%	2,513	49.4%
7-8 p.m.	2,916	10	2,886	99.0%	1,786	61.2%
8-9 p.m.	2,916	10	2,454	84.2%	1,547	53.0%
9-10 p.m.	2,916	10	1,874	64.3%	1,213	41.6%
10-11 p.m.	2,916	10	1,447	49.6%	1,345	46.1%
11 p.m. – 12 a.m.	2,916	10	1,264	43.3%	644	22.1%
12-1 a.m.	2,916	10	450	15.4%	201	6.9%

Shading indicates Service Delivery Policy capacity is exceeded.

Table 2-11:Build (2023) Conditions Ridership and Capacity Summary, Non-core Area, Weekday

Time	Non-core Policy Capacity	Headway (min)	Ridership between North Station - Community College			
			NB	NB% of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	394	18.9%	1,105	52.9%
6-7 a.m.	4,536	7.5	1,263	27.8%	2,822	62.2%
7-8 a.m.	9,432	5	1,910	20.2%	5,874	62.3%
8-9 a.m.	9,432	5	2,007	21.3%	7,715	81.8%
9-10 a.m.	4,253	8	1,436	55.0%	4,254	163.0%
10-11 a.m.	2,610	8	1,207	46.2%	2,457	94.1%
11 a.m. – 12 p.m.	2,610	8	1,338	51.3%	2,134	81.8%
12-1 p.m.	2,610	8	1,528	58.5%	2,059	78.9%
1-2 p.m.	4,253	8	1,937	45.6%	1,987	46.7%
2-3 p.m.	5,895	8	2,448	41.5%	2,163	36.7%
3-4 p.m.	7.255	6.5	3,542	48.8%	2,262	31.2%
4-5 p.m.	9,432	5	5,423	57.5%	2,342	24.8%
5-6 p.m.	9,432	5	6,886	73.0%	2,665	28.3%
6-7 p.m.	4,536	7.5	4,300	94.8%	1,475	32.5%
7-8 p.m.	2,088	10	2,730	130.7%	1,087	52.1%
8-9 p.m.	2,088	10	2,313	110.8%	1,079	51.7%
9-10 p.m.	2,088	10	1,768	84.7%	763	37.0%
10-11 p.m.	2,088	10	1,617	77.4%	617	29.6%
11 p.m. – 12 a.m.	2,088	10	1,192	57.1%	337	16.2%
12-1 a.m.	2,088	10	455	21.8%	150	7.2%

Shading indicates Service Delivery Policy capacity is exceeded.

Table 2-12:Build (2023) Conditions Ridership and Capacity Summary, Core Area, Saturday

Time	Core Policy Capacity	Headway (min)	Ridership between Downtown Crossing - State			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,916	10	552	18.9%	493	16.9%
6-7 a.m.	2,916	10	445	15.3%	945	32.4%
7-8 a.m.	2,916	10	767	26.3%	1,398	47.9%
8-9 a.m.	2,916	10	1,250	42.9%	1,484	50.9%
9-10 a.m.	2,916	10	1,199	41.1%	1,801	61.8%
10-11 a.m.	2,916	10	1,489	51.1%	1,769	60.7%
11 a.m. – 12 p.m.	2,916	10	1,887	64.7%	1,914	65.6%
12-1 p.m.	2,916	10	1,971	67.6%	2,057	70.5%
1-2 p.m.	2,916	10	2,036	69.8%	1,951	66.9%
2-3 p.m.	2,916	10	2,153	73.8%	1,986	68.1%
3-4 p.m.	3,240	9	2,333	72.0%	2,181	67.3%
4-5 p.m.	3,645	8	2,475	67.9%	2,175	59.7%
5-6 p.m.	3,645	8	2,276	62.4%	2,314	63.5%
6-7 p.m.	3,240	9	1,899	58.6%	1,744	53.8%
7-8 p.m.	2,916	10	1,678	57.5%	1,472	50.5%
8-9 p.m.	2,916	10	1,602	54.9%	1,243	42.6%
9-10 p.m.	2,916	10	1,496	51.3%	1,197	41.1%
10-11 p.m.	2,916	10	1,744	59.8%	1,195	41.1%
11 p.m. – 12 a.m.	2,916	10	1,514	51.9%	949	32.6%
12-1 a.m.	2,916	10	717	24.6%	548	18.8%

Table 2-13:Build (2023) Conditions Ridership and Capacity Summary, Non-core Area, Saturday

Time	Non-core Policy Capacity	Head way (min)	Ridership between North Station – Community College			
			NB	NB % of Capacity	SB	SB % of Capacity
5-6 a.m.	2,088	10	198	9.5%	344	16.5%
6-7 a.m.	2,088	10	315	15.1%	758	36.4%
7-8 a.m.	2,088	10	498	23.9%	1,072	51.4%
8-9 a.m.	2,088	10	1,029	49.3%	1,225	58.8%
9-10 a.m.	2,088	10	683	32.7%	1,842	88.4%
10-11 a.m.	2,088	10	852	40.8%	1,639	78.7%
11 a.m. – 12 p.m.	2,088	10	1,033	49.4%	2,042	98.0%
12-1 p.m.	2,088	10	1,129	54.1%	2,093	100.2%
1-2 p.m.	2,088	10	1,132	54.2%	1,778	85.4%
2-3 p.m.	2,088	10	1,390	66.6%	1,740	83.6%
3-4 p.m.	2,320	9	1,678	72.3%	1,730	74.8%
4-5 p.m.	2,610	8	1,935	74.1%	1,635	62.8%
5-6 p.m.	2,610	8	2,027	77.7%	1,380	53.1%
6-7 p.m.	2,320	9	1,772	76.4%	1,128	48.8%
7-8 p.m.	2,088	10	1,626	77.9%	1,024	49.2%
8-9 p.m.	2,088	10	1,397	66.9%	819	39.4%
9-10 p.m.	2,088	10	1,425	68.2%	729	35.1%
10-11 p.m.	2,088	10	1,542	73.8%	803	38.7%
11 p.m. – 12 a.m.	2,088	10	1,466	70.2%	558	27.0%
12-1 a.m.	2,088	10	725	34.7%	374	18.2%

Shading indicates Service Delivery Policy capacity is exceeded.

2.2.3 ANALYSIS RESULTS: PROJECT PEAK FULL NETWORK ANALYSIS

In addition to the analysis of a full day of Orange Line service at the peak core area and northerly non-core area loadpoints, the Proponent also analyzed one hour of weekday data for the entire Orange Line network between Back Bay and Oak Grove stations. This analysis has been shared with and reviewed by MassDOT and the MBTA. These stations are where Project patrons are expected to utilize the Orange Line. Approximately 80% of Project patrons and employees that use the Orange Line are expected to access the Orange Line from the south. For purposes of this analysis, all of these patrons are assumed to board the Orange Line at Back Bay station and alight at Wellington Station because of the availability of the Wynn shuttle at this location; Back Bay station is the southernmost core-area station as well as a major commuter rail station. The remaining 20% of patrons are assumed to board at Oak Grove station and alight at Malden Center station due to the availability of the Wynn shuttle at that location.

The time period analyzed was 7:00-8:00 p.m. This represents the first full hour after the p.m. peak period, so existing ridership is similar to peak period ridership, and is also the approximate peak period of the Project. Ridership generally declines after the 7:00 p.m. hour.

2.2.3.1 EXISTING (2012) CONDITIONS IN PROJECT P.M. PEAK HOUR

As shown in Table 2-14, estimated ridership does not exceed capacity in the core area from 7:00-8:00 p.m. on weekdays, but does exceed MBTA policy capacity at two loadpoints outside the core area because the policy capacity decreases from 140% of total seats to 100% of total seats (a reduction of 828 passengers) outside of the core area. The two loadpoints at which the policy capacity is estimated to be exceeded are between North Station and Community College and between Community College and Sullivan Square. However, the estimated ridership would still be well below the core-area policy capacity at these loadpoints.

Note that Assembly Station was not open at the time of the data collection, and is not reflected in Table 2-14. Southbound data is not included because a 10-minute headway at this hour is sufficient for all conditions in the southbound direction.

2.2.3.2 NO BUILD (2023) CONDITIONS IN PROJECT P.M. PEAK HOUR

To assess the impact of additional estimated ridership due to ambient growth in the greater Boston area and the impact of other projects along the Orange Line, a No Build analysis was conducted. In order to

estimate No Build (2023) Condition, existing ridership was increased by 11.6%. As shown in Table 2-15, No Build ridership is compared with capacity using the increased ridership. The over-capacity conditions between North Station and Community College persist in the No Build (2023) Condition.

Table 2-14: Existing (2012) Conditions, Orange Line Northbound Ridership, 7:00-8:00 p.m., Weekday

Load Point	Capacity	Northbound Ridership	Northbound % of Capacity
Oak Grove - Malden	2,088	68	3.3%
Malden – Wellington	2,088	1,429	68.4%
Wellington - Sullivan	2,088	1,772	84.9%
Sullivan – Community College	2,088	2,237	107.1%
Community College – North Station	2,088	2,297	110.0%
North Station – Haymarket	2,916	2,211	75.8%
Haymarket – State	2,916	2,287	78.4%
State – Downtown Crossing	2,916	2,437	83.6%
Downtown Crossing – Chinatown	2,916	2,224	76.3%
Chinatown – Tufts	2,916	2,074	71.1%
Tufts – Back Bay	2,916	1,856	63.6%

Orange cell shading indicates a core area loadpoint (Back Bay-North Station). Policy capacity = 140% of seats in core area, 100% of seats outside core area.

Table 2-15: No Build (2023) Conditions, Orange Line Northbound Ridership, 7:00-8:00 p.m., Weekday

Load Point	Capacity	Northbound Ridership	Northbound % of Capacity
Oak Grove - Malden	2,088	76	3.6%
Malden – Wellington	2,088	1,595	76.4%
Wellington - Sullivan	2,088	1,978	94.7%
Sullivan – Community College	2,088	2,496	119.6%
Community College – North Station	2,088	2,563	122.8%
North Station – Haymarket	2,916	2,467	84.6%
Haymarket – State	2,916	2,552	87.5%
State – Downtown Crossing	2,916	2,720	93.3%
Downtown Crossing – Chinatown	2,916	2,482	85.1%
Chinatown – Tufts	2,916	2,315	79.4%
Tufts – Back Bay	2,916	2,071	71.0%

Orange cell shading indicates a core area loadpoint (Back Bay-North Station). Policy capacity = 140% of seats in core area, 100% of seats outside core area.

2.2.3.3 BUILD (2023) CONDITIONS IN PROJECT P.M. PEAK HOUR

To assess the impact of estimated Project-generated Orange Line trips, Build trips were added to No Build passenger volumes. The addition of estimated Project trips causes the Orange Line to exceed policy capacity by 21 passengers between Wellington and Sullivan Square stations, as shown in Table 2-16.

Table 2-16: Build (2023) Conditions, Orange Line Northbound Ridership, 7:00-8:00 p.m., Weekday

Load Point	Capacity	Northbound Ridership	Northbound % of Capacity
Oak Grove - Malden	2,088	109	5.2%
Malden – Wellington	2,088	1,595	76.4%
Wellington - Sullivan	2,088	2,145	102.7%
Sullivan – Community College	2,088	2,663	127.6%
Community College – North Station	2,088	2,730	130.7%
North Station – Haymarket	2,916	2,634	90.3%
Haymarket – State	2,916	2,719	93.3%
State – Downtown Crossing	2,916	2,887	99.0%
Downtown Crossing – Chinatown	2,916	2,649	90.8%
Chinatown – Tufts	2,916	2,482	85.1%
Tufts – Back Bay	2,916	2,238	76.8%

Orange cell shading indicates a core area loadpoint (Back Bay-North Station). Policy capacity = 140% of seats in core area, 100% of seats outside core area.

2.3 PROPOSED ORANGE LINE ANNUAL OPRATING SUBSIDY

2.3.1 PROPOSED METHODOLOGY

Discussions with MassDOT, including the MBTA planning and operations staff, regarding how to calculate an operating subsidy, led to a request that the Proponent mitigate Orange Line impacts the same way roadway impacts are mitigated. This approach would have the Proponent mitigate, or "fix", any deterioration in service caused by the Project from the level of service that is provided in the No Build Condition. In the case of the Orange Line, the proposed mitigation approach is to fund additional train capacity in any operating hours where the level of service in the Build Condition is projected to be below the level of service in the No Build Condition, unless the Orange Line has existing capacity to handle the increased trips (i.e., still below capacity in the Build Condition). As some of the hours are

currently over capacity today and more will be in the No Build Condition, MassDOT has requested that the Proponent mitigate any hours the Orange Line is over capacity in the Build Condition, acknowledging that the Project will not be responsible for all excesses in Orange Line capacity.

Mitigating train capacity impacts is accomplished by adding additional train sets in the impacted hour, which allows the MBTA to reduce headways (time between trains) in that hour, carrying more passengers than the current headways. As trains run as whole trains, the Proponent would fund an entire additional train set (six cars in the case of the Orange Line) in the impacted hours, not just a hypothetical portion of a train set required to carry the number of trips causing the overcapacity condition.

As shown in earlier sections, there are four times of the week in the Build Condition that the Orange Line are projected to be over capacity, as follows:

- Weekdays 9:00-10:00 a.m. Southbound in both the core and non-core areas;
- Weeknights 7:00-8:00 p.m. Northbound in the non-core area;
- Weeknights 8-9 p.m. Northbound in the non-core area; and
- Saturday 12-1 p.m. Southbound in the non-core area.

The cost to operate Orange Line train sets that was provided by MassDOT is approximately $210/train set/hour. The cost to run each train for a year is derived from a formula of one hour per day multiplied by days run per week (5 for weekday and 1 for Saturday) multiplied by $210/train set/hour.

The headway calculation, as shown in Table 2-17, is a result of train capacity and ridership and is used to derive the number of additional train sets needed.

Table 2-17: Headway Analysis

Time Period	Total Trips	Current HW	Calculated HW	Proposed HW
Weekday 9-10 a.m. non-core	4,254	8	4.91	5
Weekday 7-8 p.m. non-core	2,730	10	7.65	7.5
Weekday 8-9 p.m. non-core	2,313	10	9.03	9
Saturday 12-1 p.m. non-core	2,093	10	9.98	10

HW is an abbreviation for headway, measured in minutes.

Summary Table 2-18 shows the proposed headways, resulting additional trains, and costs to mitigate these overcapacity hours.

Table 2-18: Mitigation Cost Analysis

Time Period	Current HW	Proposed HW	Added Trains	Days/ Week	Weeks/ Year	Annual Trips	Train Costs
Weekday 9-10 a.m. non-core	8	5	4	5	52	1,040	$218,400
Weekday 7-8 p.m. non-core	10	7.5	2	5	52	520	$109,200
Weekday 8-9 p.m. non-core	10	9	1	5	52	260	$54,600
Saturday 12-1 p.m. non-core	10	10	0	1	52	0	$0
Total							**$382,200**

The additional passengers generated by the Project will pay a standard fare to ride the Orange Line. The proposed subsidy methodology calculates a revenue projection from those riders and deducts it from the operating cost, as shown in Table 2-19. In order to account for some passengers holding monthly passes, it was assumed that each Project trip would generate an average of $1, which is considerably less than the existing $2.10 fare.

Table 2-19: Revenue Analysis

Time Period	Project Trips	Days/Week	Weeks/Year	Total/Year
Weekday 9-10 a.m. non-core	104	5	52	$27,040
Weekday 7-8 p.m. non-core	167	5	52	$43,420
Weekday 8-9 p.m. non-core	153	5	52	$39,780
Saturday 12-1 p.m. non-core	5	1	52	$260
			Total	**$110,500**

2.3.2 INCENTIVE FOR LATE NIGHT RIDERSHIP

In addition, the MBTA and Proponent are interested in promoting train ridership in the evening and late night hours as part of the pursuit of aggressive mode

distribution. In support of that effort, the MBTA requested that the Proponent fund additional train sets in the 9:00 p.m. to 11:00 p.m. window to reduce headways, making train ridership more appealing. The Proponent is proposing to run one additional train set in each of those two, one hour segments. While these trains are currently well under capacity and will be in the Build Condition, the intent in the addition of these trains is the headway reduction. The additional cost of these trains is estimated to be 2 trains x $210/train x 5 days/week x 52 weeks/year = $109,200/year. The Proponent has agreed to not take a revenue reduction for these hours, resulting in an annual subsidy of $109,200 each year.

2.3.3 AMOUNT OF SUBSIDY

The resulting annual cost of $380,900 ($382,200 in mitigation cost minus $110,500 in revenue, plus the $109,200 late-night incentive subsidy) is the Proponent's proposed annual operating subsidy for additional train service on the Orange Line. This subsidy is proposed to be used specifically and only to fund those additional trains and would be a fixed annual amount for the term of the Proponent's gaming license, fifteen years from opening date of the Project. This subsidy amount is stated in current (2015) dollars and would be inflated each year by a fixed factor of 2.5%, consistent with historical Cost of Living Adjustments. Assuming a 2018 opening, the subsidy would be $410,188 in that starting year and $579,584 in 2032, fifteen years later. The total subsidy over that fifteen-year period would be approximately $7,355,455.

2.3.4 MANAGEMENT AND UTILIZATION OF FUNDS

The payment is envisioned to be a fixed annual payment for the fifteen (15) years after Project opening. However, it is also proposed that the MBTA would document the annual deployment of the train sets and provide that documentation to the Proponent annually upon request. If the train sets are not consistently deployed over each year, the subsidy may be adjusted accordingly.

2.4 TRANSIT STATION IMPROVEMENTS

The Proponent is proposing improvements at three MBTA stations to facilitate and encourage Orange Line usage and to improve circulation for all vehicles using the stations. These improvements are described in the following sections.

2.4.1 WELLINGTON STATION

The existing configuration of the curbside area adjacent to Wellington Station is shown in Figure 2-13. Analysis of the usage of the existing bus bays indicated that there are not currently opportunities for the Project's patron shuttles to share curb space with any of the existing bus routes that would be acceptable to the MBTA. As

a result, the Proponent has developed, in consultation with the MBTA, a plan to provide the Proponent's patron shuttles with exclusive curb space.

The plan includes the construction of a fourth curb north of the existing shuttle/taxi/general auto pick-up/drop-off curb. The general pick-up/drop-off and taxi activity would occur at that location, and the Proponent's patron shuttle bus and other private shuttles would use the existing third curb, as shown in Figure 2-14. The reconfiguration of the parking lot to accommodate the fourth curb will result in additional revenue-generating parking spaces for the MBTA at Wellington Station. The MBTA's Director of Parking has indicated that the MBTA is in the process of upgrading the revenue control system at Wellington Station. The Proponent will work with the MBTA to incorporate the upgrades to revenue control in the proposed plan.

2.4.2 MALDEN CENTER STATION

At Malden Center Station, the plan developed in consultation with the MBTA to accommodate the Proponent's shuttle buses is for those shuttle busses to berth along the southern curb in the western bus bay, where enough space will still remain for an MBTA bus to lay over. This layout also ensures that MBTA buses will still be able to turn into the busway when the Proponent's shuttle bus is parked along the southern curb of the busway.

The curb configuration at Malden Center Station is shown in Figure 2-15. The proposed Proponent's shuttle bus berth at Malden Station is located along the busway on the west side of station. This busway is not used as frequently as the busway on the east side of the station. The southern curb in the western bus bay is not devoted to any bus stop. It is frequently used as a place for buses to lay over between trips. Each of the three sections of the southern curb is long enough to accomodate two MBTA buses.

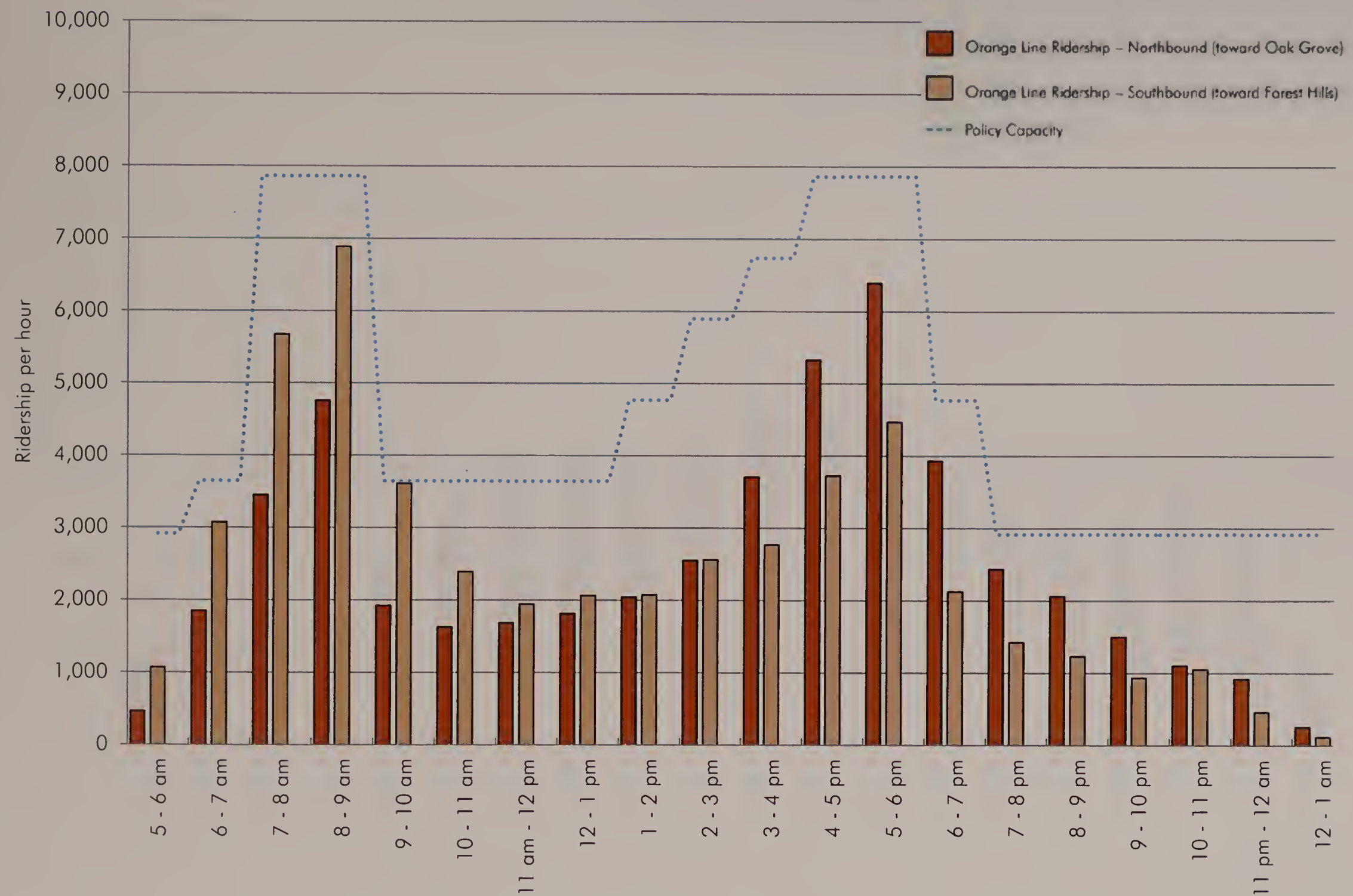
As shown in Figure 2-15, the proposed Proponent's shuttle bus berthing location is far enough south so that one bus may layover in this area while still allowing buses to turn into the busway. As laid out in Figure 2-15, the southern curb can be used by one MBTA bus while providing a dedicated Project shuttle berth location and allowing MBTA buses to turn into the busway without conflict. The Proponent will reconstruct the sidewalk from the station along this curb to ensure that it is ADA-compliant. The Proponent may also place a passenger shelter on MBTA property near the corner of the busway and Centre Street (Route 60).

2.4.3 SULLIVAN SQUARE STATION

As a result of the extensive consultation with the MBTA and Boston Transportation Department ("BTD"), the Proponent will implement additional improvements to the

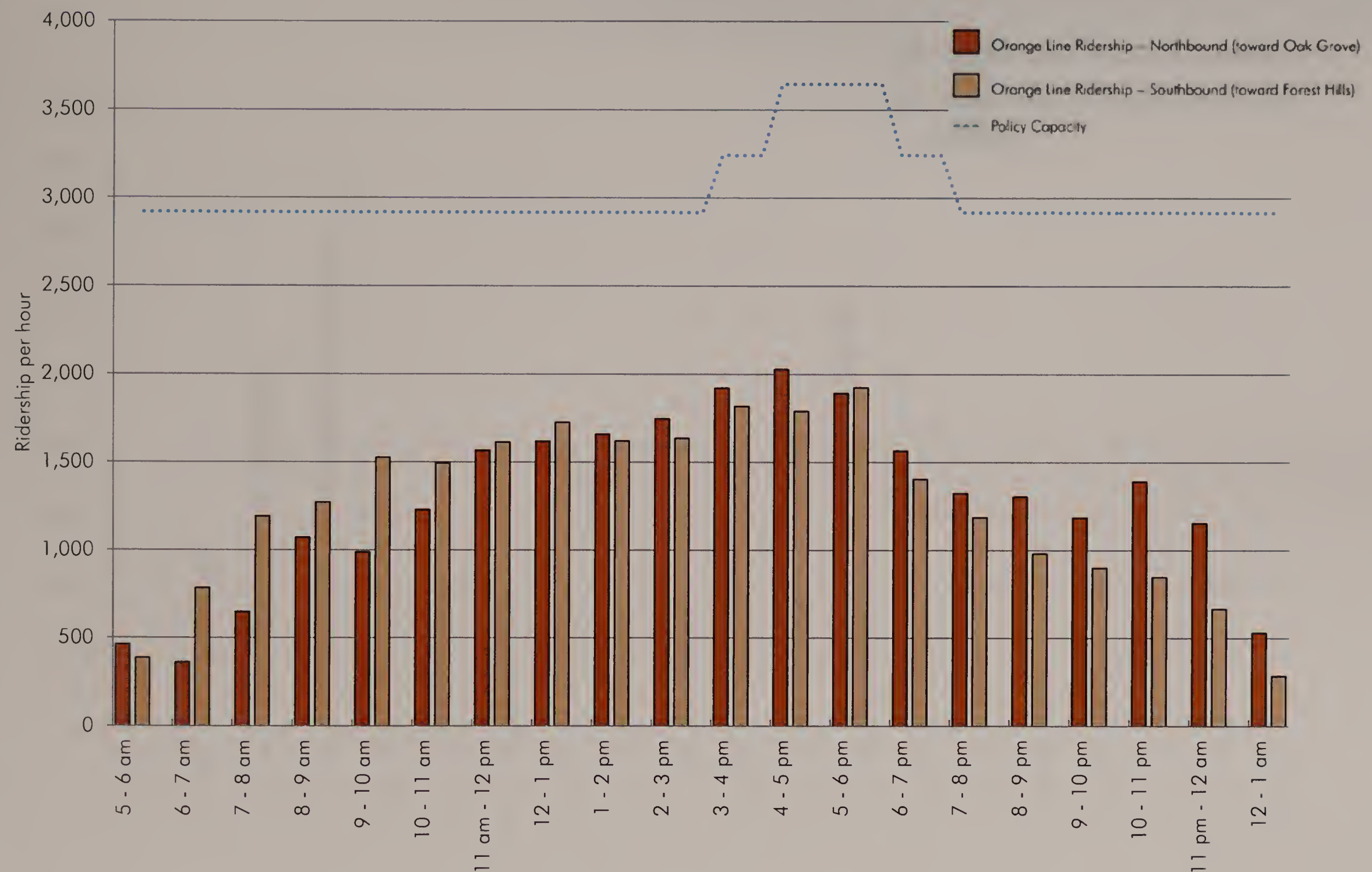
MBTA Busway between Cambridge Street and Maffa Way, provide a reconfiguration of the parking field in front of the MBTA Sullivan Square bus station, and implement additional improvements to the bus station area at Sullivan Square Station. The plan includes a new signalized busway exit opposite the I-93 northbound off-ramp on Cambridge Street for right-turning buses. In order to accommodate the need for MBTA bus layover, which currently occurs on the MBTA Busway that will become Beacham Street Extension, the Proponent will reconstruct the lower busway and the parking field, creating a new circulation pattern for the bus station. All buses will enter the upper busway from Maffa Way. A new signalized entrance will be constructed, allowing buses to circulate into the station from Beacham Street Extension and Main Street. Buses will circulate from the upper busway to the lower busway, exiting the station onto Maffa Way via the new signalized busway exit, with the exception of those buses with destinations via Cambridge Street westbound toward Somerville.

All proposed improvements for the station will be ADA-compliant. The Proponent will also provide bus shelters at the bus berths on the lower busway. These proposed improvements are shown in Figure 2-16.



Wynn Resort in Everett
Everett, Massachusetts

Figure 2-1
MBTA Orange Line, Existing Year 2012 Conditions, Weekday Peak Period Ridership, Peak Load Point: State to Downtown Crossing
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Resort in Everett
Everett, Massachusetts

Figure 2-2

MBTA Orange Line, Existing Year 2012 Conditions, Saturday Peak Period Ridership, Peak Load Point: State to Downtown Crossing

Source: Howard/Stein-Hudson Associates, Inc., 2015

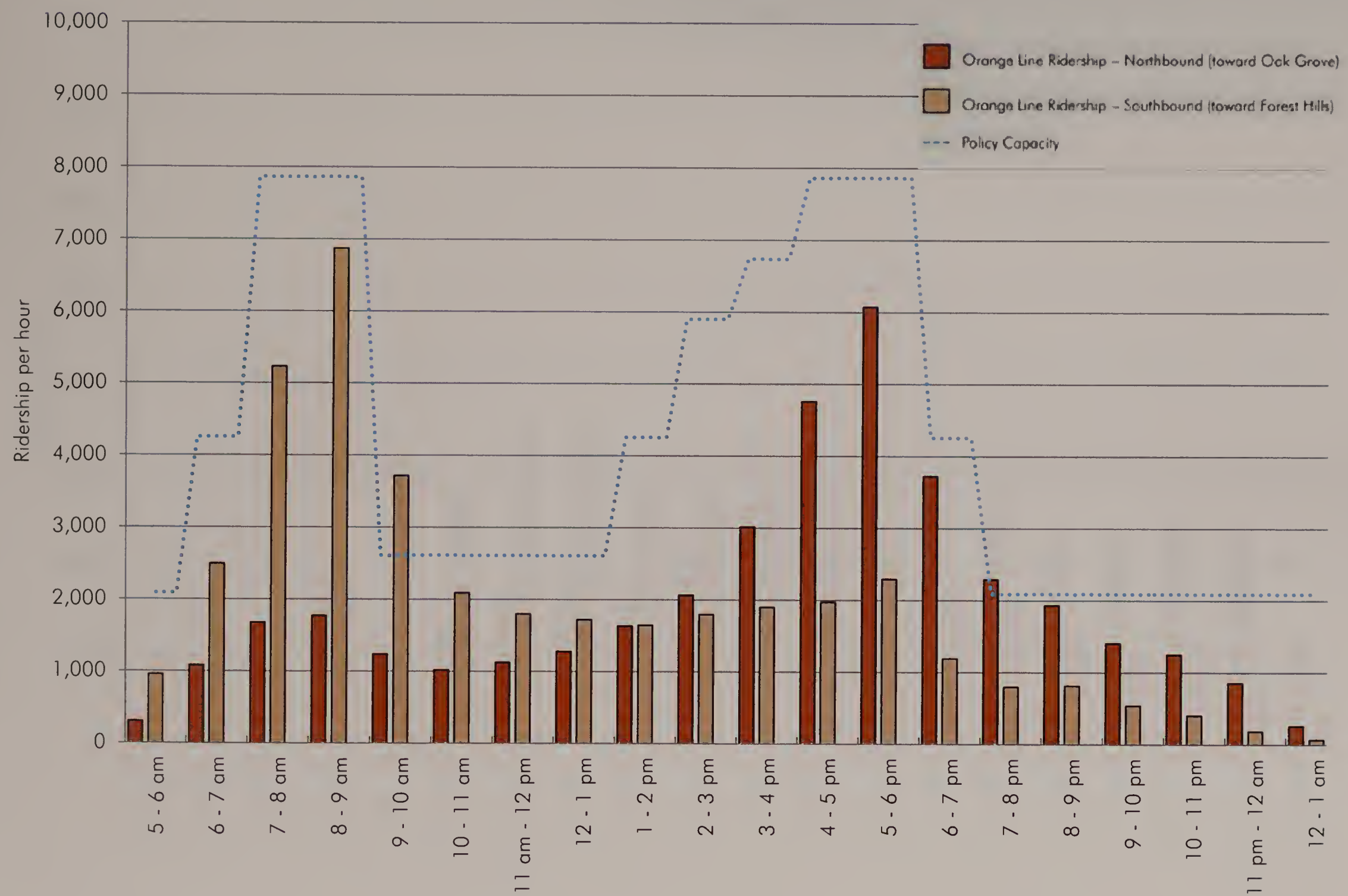
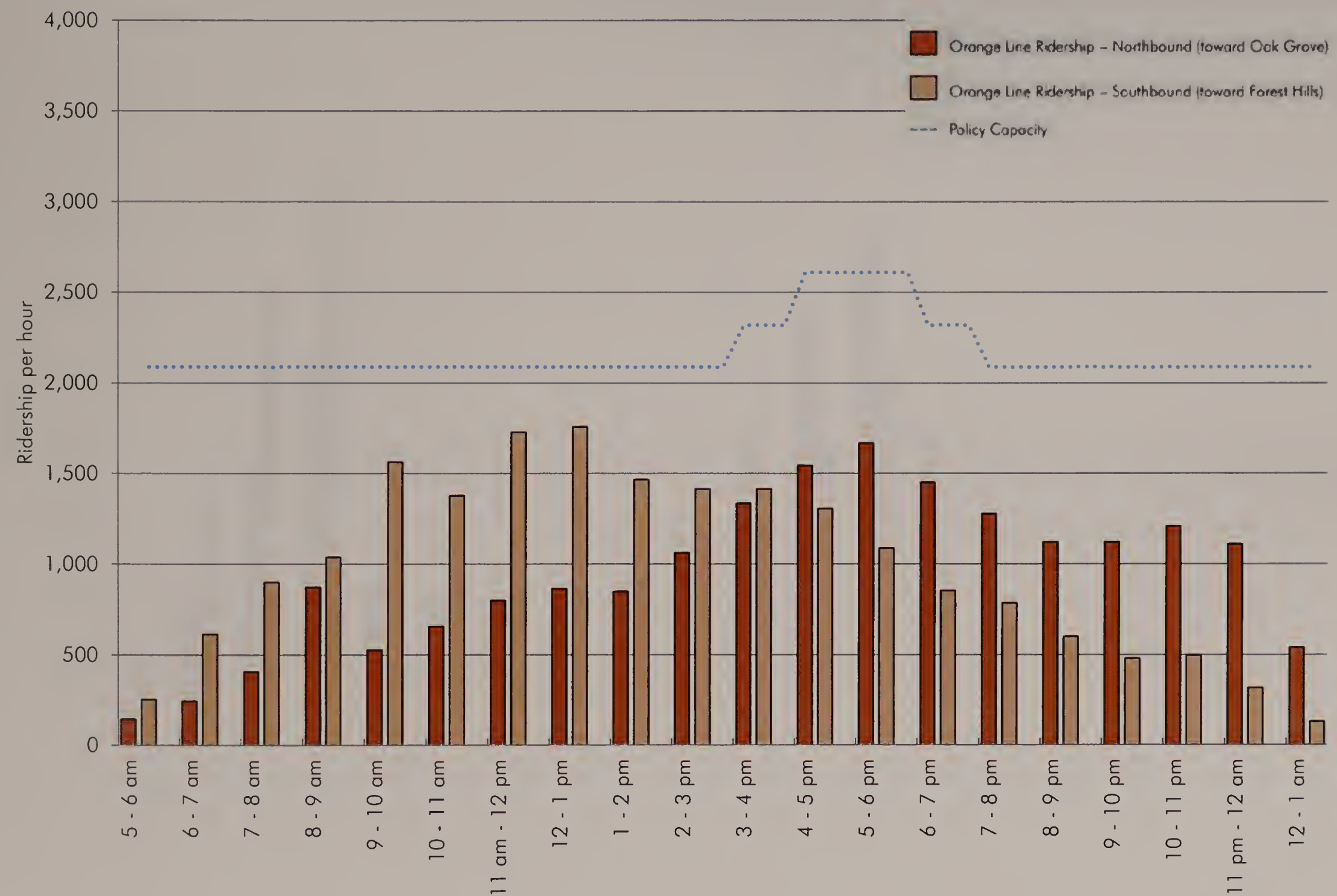


Figure 2-3
MBTA Orange Line, Existing Year 2012 Conditions, Weekday Peak Period Ridership, Peak Load Point: North Station to Community College
Source: Howard/Stein-Hudson Associates, Inc., 2015

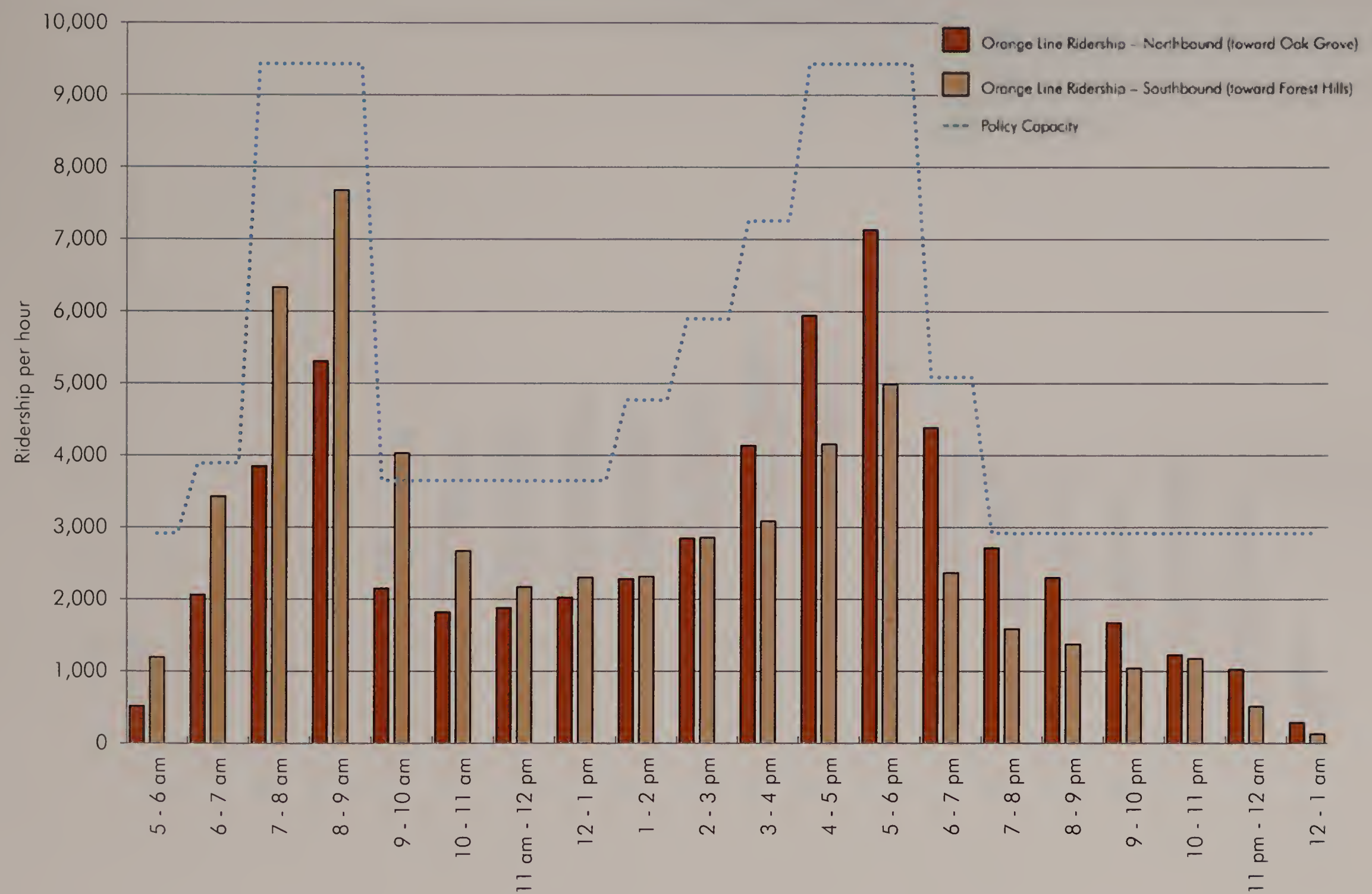


Wynn Resort in Everett
Everett, Massachusetts

Figure 2-4

MBTA Orange Line, Existing Year 2012 Conditions, Saturday Peak Period Ridership, Peak Load Point: North Station to Community College

Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Resort in Everett
Everett, Massachusetts

Figure 2-5

MBTA Orange Line, No-Build Year 2023 Conditions, Weekday Peak Period Ridership, Peak Load Point: State to Downtown Crossing
Source: Howard/Stein-Hudson Associates, Inc., 2015

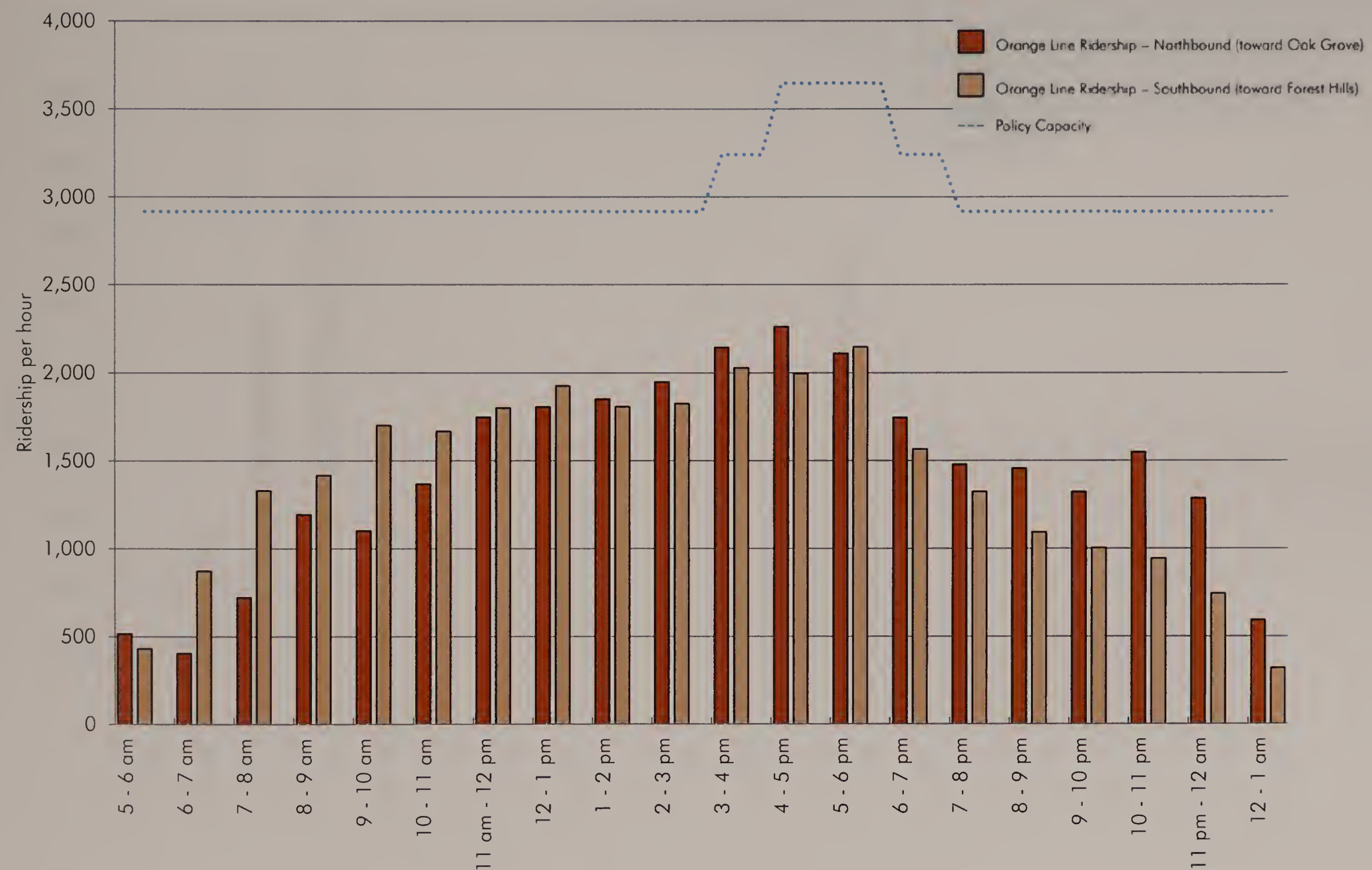
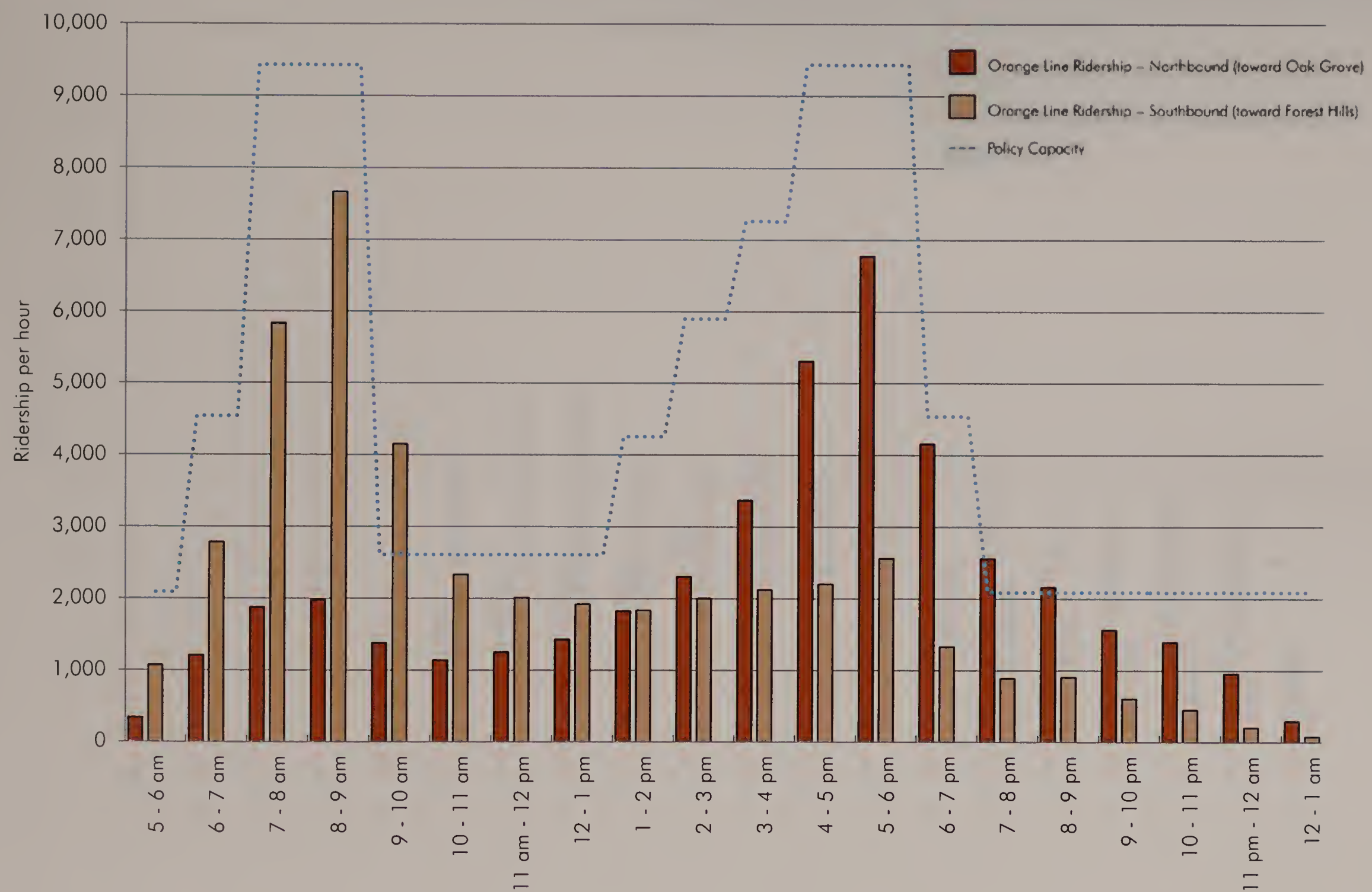


Figure 2-6

MBTA Orange Line, No-Build Year 2023 Conditions, Saturday Peak Period Ridership, Peak Load Point: State to Downtown Crossing

Source: Howard/Stein-Hudson Associates, Inc., 2015

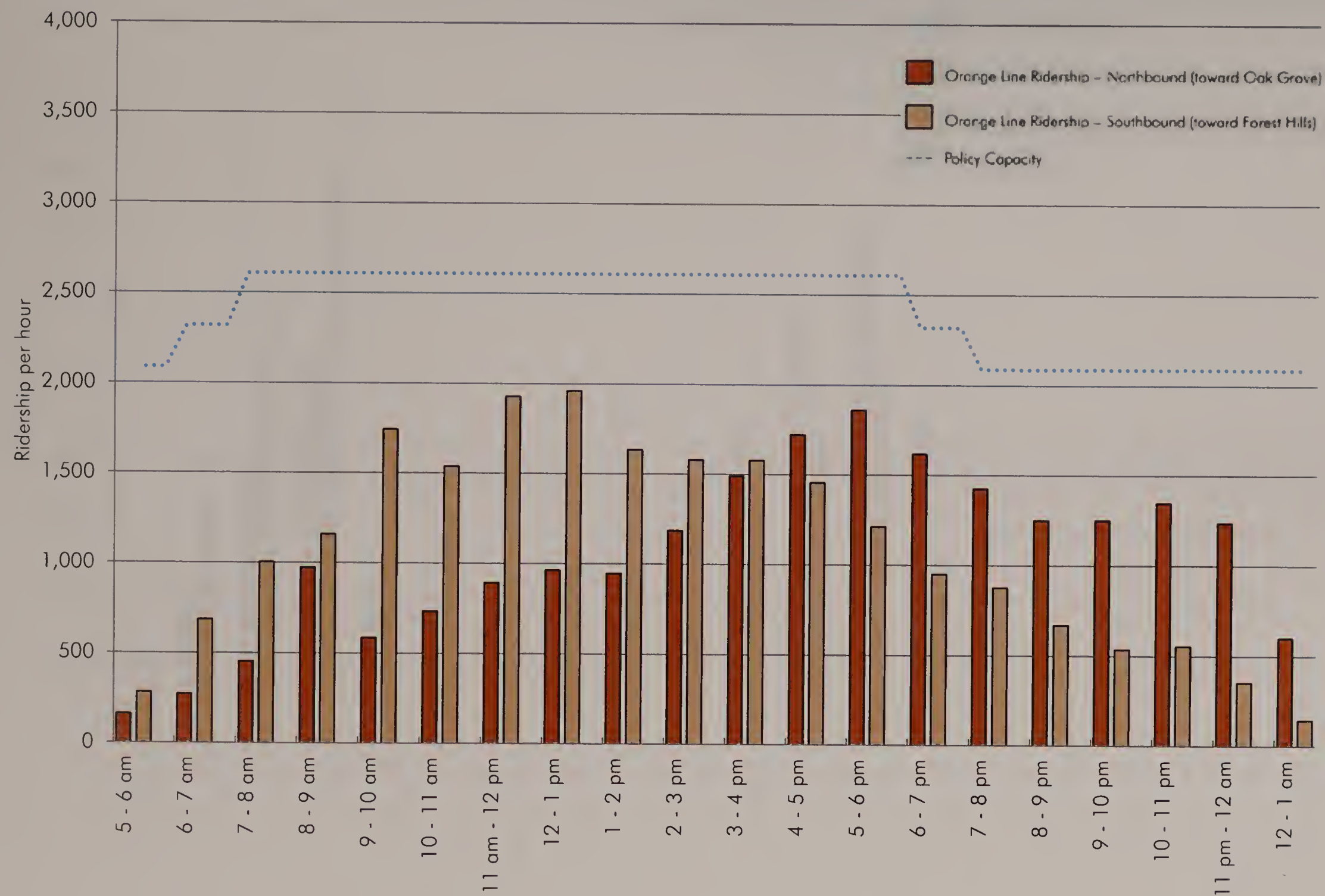


Wynn Resort in Everett
Everett, Massachusetts

Figure 2-7

MBTA Orange Line, No-Build Year 2023 Conditions, Weekday Peak Period Ridership, Peak Load Point: North Station to Community College

Source: Howard/Stein-Hudson Associates, Inc., 2015



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Everett, Massachusetts

Figure 2-8

MBTA Orange Line, No-Build Year 2023 Conditions, Saturday Peak Period Ridership, Peak Load Point: North Station to Community College

Source: Howard/Stein-Hudson Associates, Inc., 2015

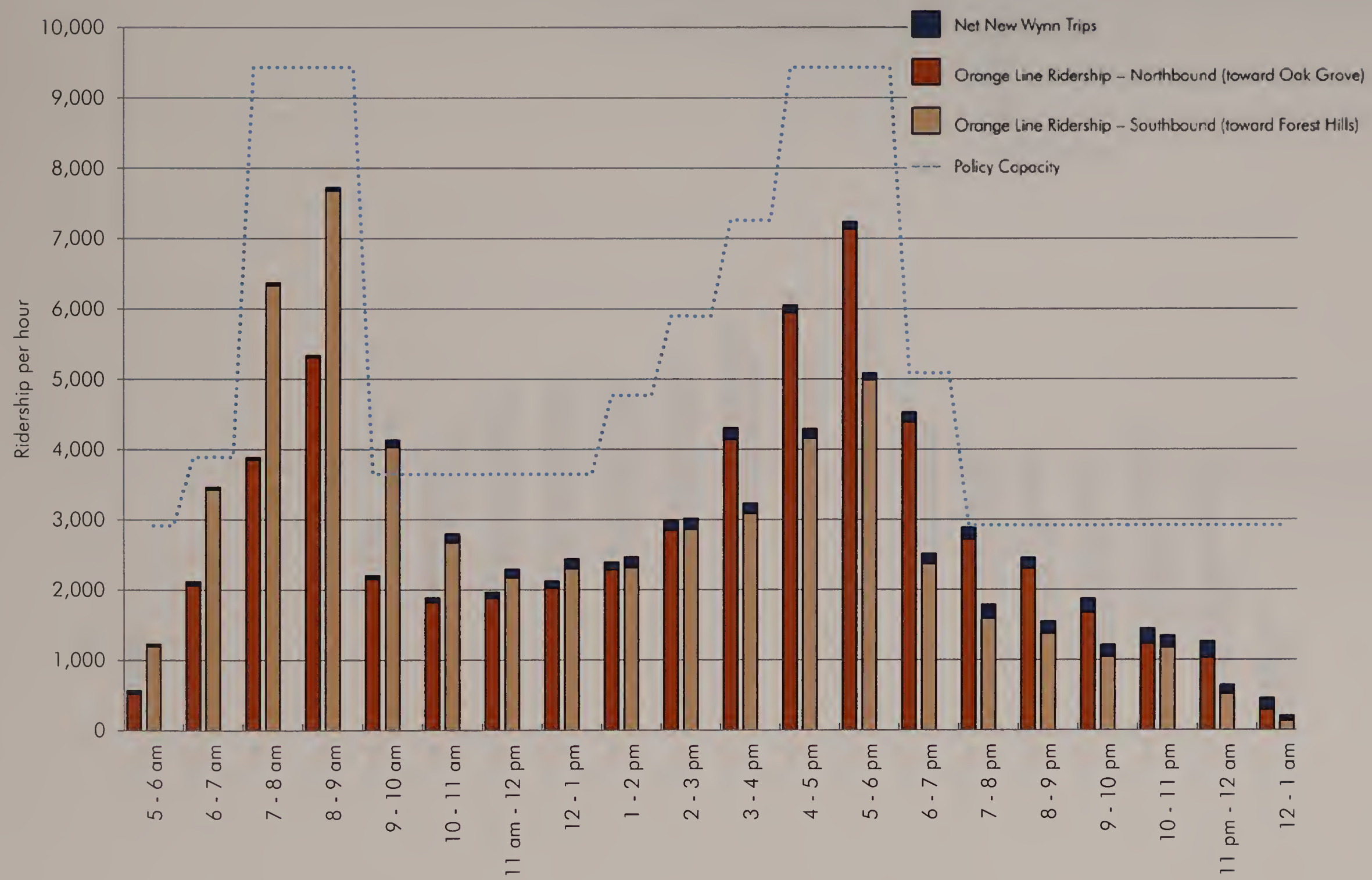

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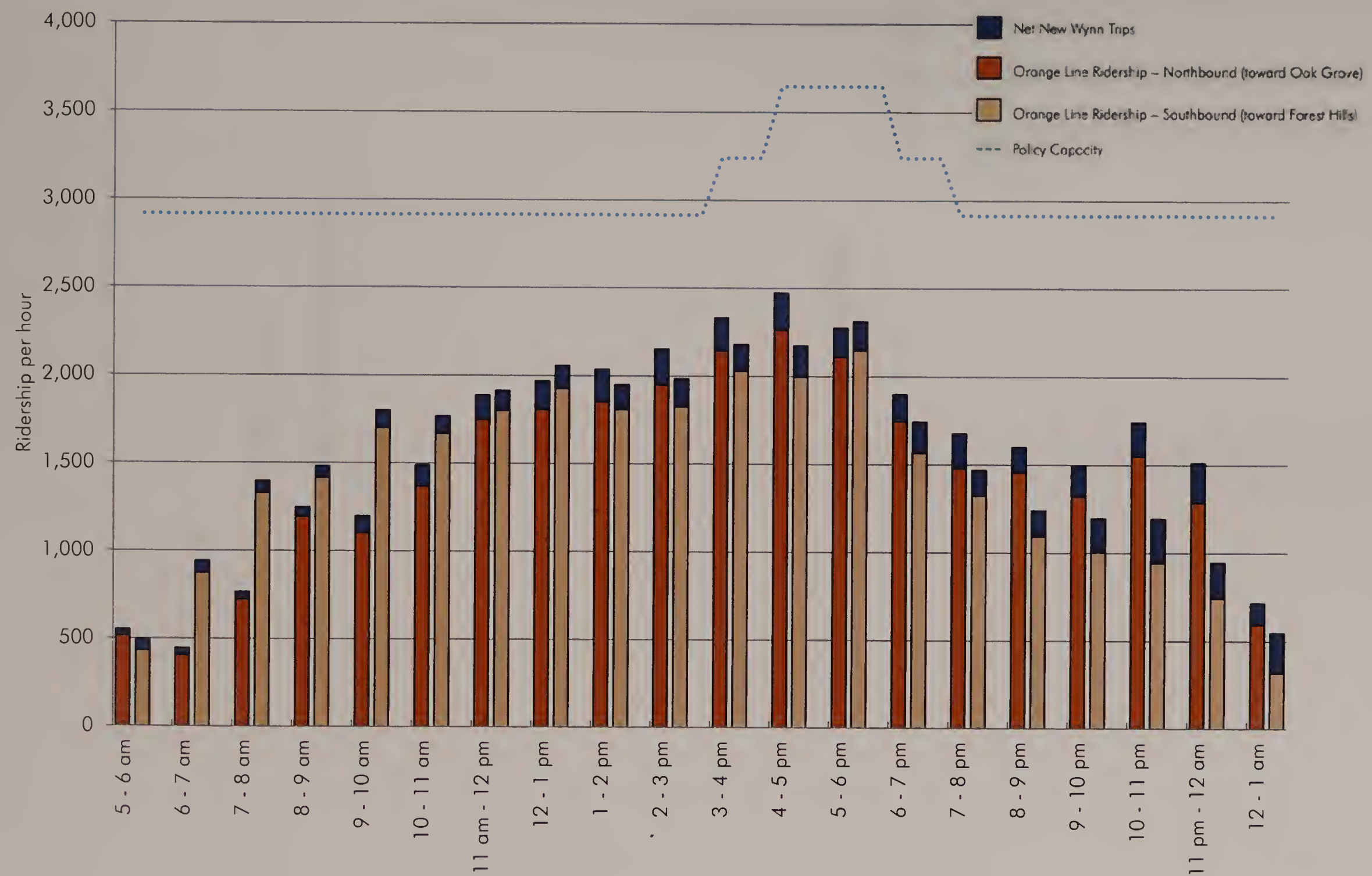
Figure 2-9

MBTA Orange Line, Build Year 2023 Conditions, Weekday Peak Period Ridership, Peak Load Point: State to Downtown Crossing
Source: Howard/Stein-Hudson Associates, Inc., 2015

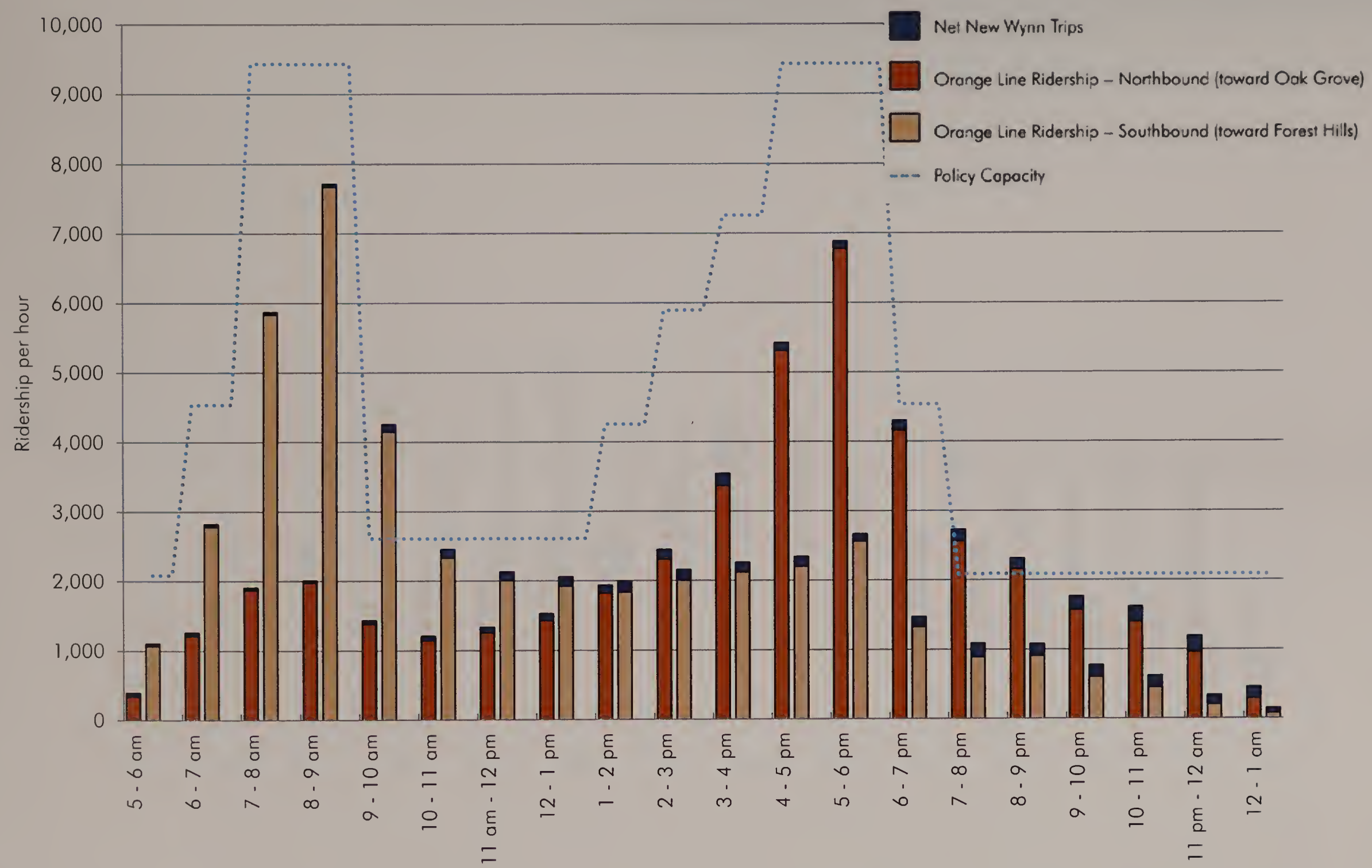


Wynn Resort in Everett
Everett, Massachusetts

Figure 2-10

MBTA Orange Line, Build Year 2023 Conditions, Saturday Peak Period Ridership, Peak Load Point: State to Downtown Crossing

Source: Howard/Stein-Hudson Associates, Inc., 2015

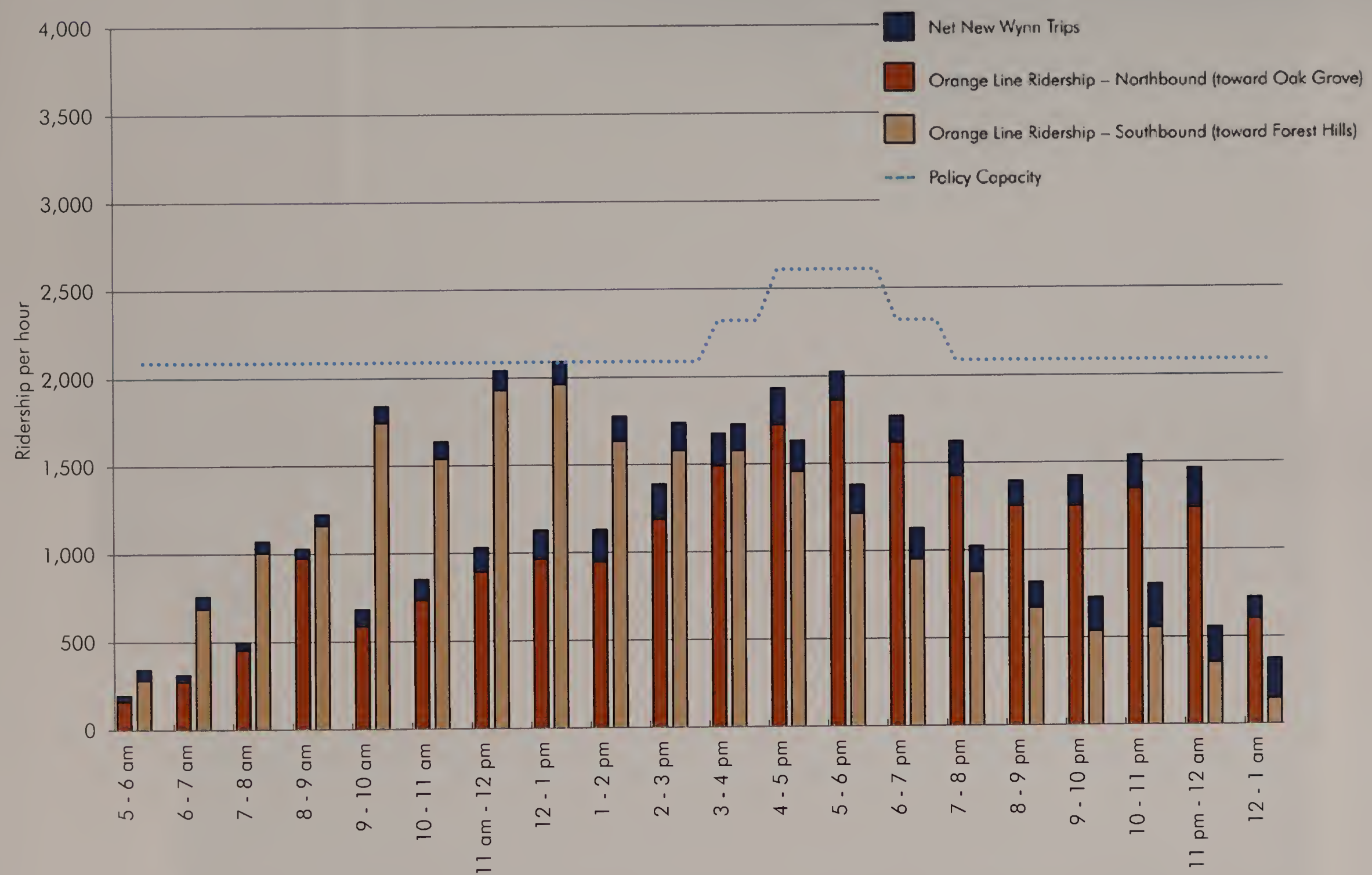


Wynn Resort in Everett
Everett, Massachusetts

Figure 2-11

MBTA Orange Line, Build Year 2023 Conditions, Weekday Peak Period Ridership, Peak Load Point: North Station to Community College

Source: Howard/Stein-Hudson Associates, Inc., 2015

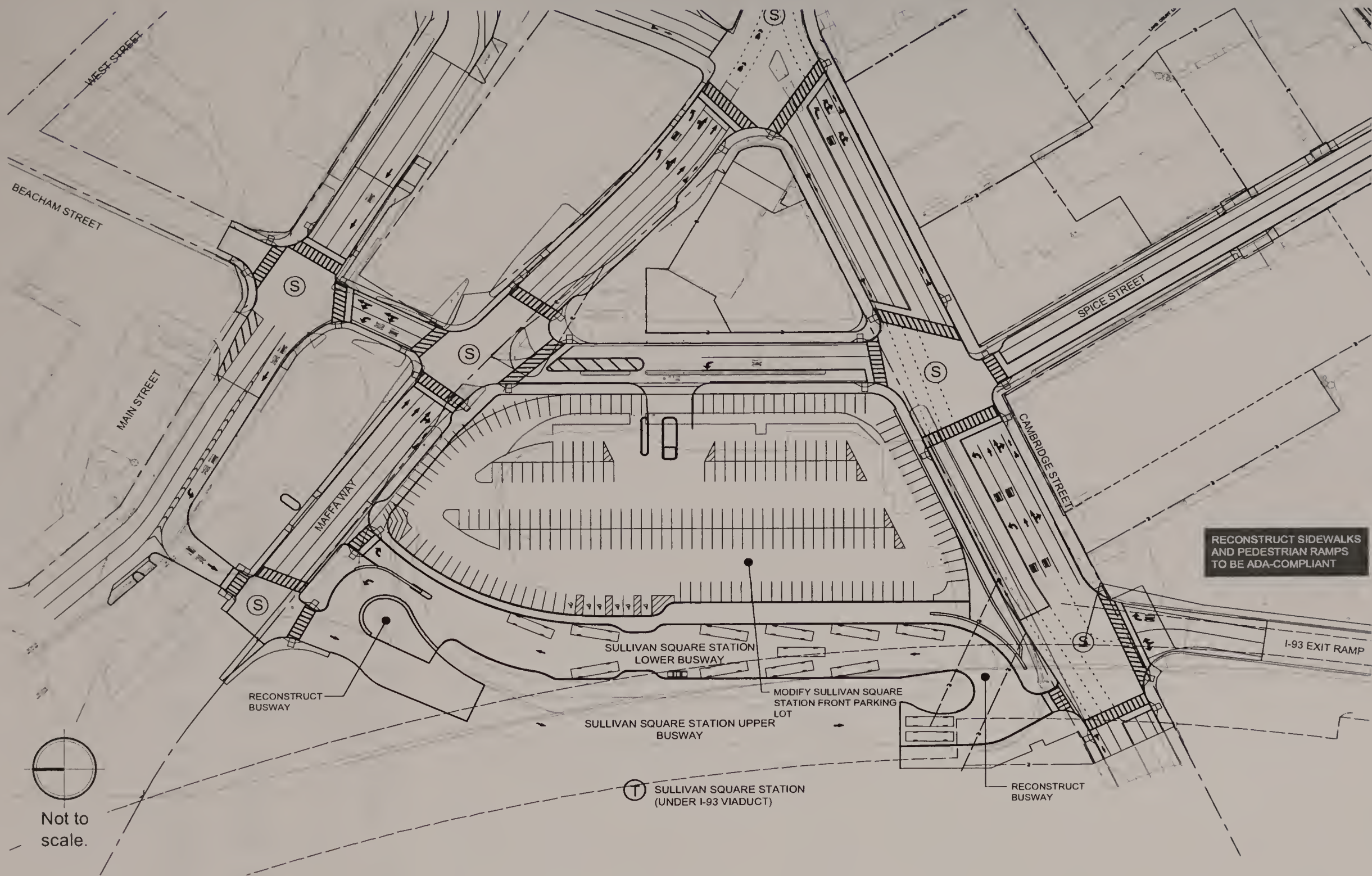


Wynn Resort in Everett
Everett, Massachusetts

Figure 2-12
MBTA Orange Line, Build Year 2023 Conditions, Saturday Peak Period Ridership, Peak Load Point: North Station to Community College
Source: Howard/Stein-Hudson Associates, Inc., 2015

Figure 2-13
Wellington Station Curbside Configuration
Source: Howard/Stein-Hudson Associates, Inc., 2015

Figure 2-14
Malden Center Station Curbside Configuration
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Resort in Everett
Everett, Massachusetts

Figure 2-15
Sullivan Square Bus Station and Parking Configuration
Source: Howard/Stein-Hudson Associates, Inc., 2015

Chapter 3

TRAFFIC AND TRANSPORTATION

CHAPTER 3: TRAFFIC AND TRANSPORTATION

3.1 INTRODUCTION

This chapter includes a discussion of the process that has been initiated for the purpose of developing a plan for the long-term improvements to the Rutherford Avenue corridor, in response to MassDOT's Comment Letter. In addition, per the SFEIR Certificate, this chapter also identifies and clarifies how and for what purposes the Synchro and VISIM models were used. The requested am peak hour operations data has been provided, and technical questions have been answered. This chapter also addresses potential geometric improvements to address the intersection of Mystic Valley Parkway and the I-93 Southbound Exit 31 off-ramp.

3.2 INTEGRATING BOSTON'S RUTHERFORD AVENUE-SULLIVAN SQUARE LONG-TERM PLAN WITH PROJECT TRAFFIC

3.2.1 LEADERSHIP COALITION

In the MassDOT Comment Letter, MassDOT requested the preparation of a second SFEIR for the purpose, in part, of a process for the development of the long-term improvements for the Rutherford Avenue corridor. The SFEIR Certificate noted that such process would "require participation by the City [of Boston], the Proponent, the MGC and MassDOT" and that the "success of this effort would be dependent on the active and constructive participation by all of the participants." Notwithstanding, the SFEIR Certificate observed that building consensus between the parties could pose a significant challenge given the litigation pending between the City of Boston and the MGC.

Following receipt of the SFEIR Certificate, the Proponent met with MassDOT on April 24, 2015. The purpose of this meeting was to ascertain the best way to convene an initial meeting with the appropriate stakeholders for the purpose of developing a planning process for the long-term improvements for the Rutherford Avenue corridor. In preparation for this meeting with MassDOT, the Proponent prepared and distributed to MassDOT the flowchart attached hereto as Figure 3-1. The purpose of the proposed flowchart was to outline the process for implementing the long-term improvements for the Rutherford Avenue corridor. At this meeting, MassDOT informed the Proponent that MassDOT would convene an initial meeting between the stakeholders to maximize the likelihood of participation by all stakeholders.

MassDOT met again with the Proponent on May 6, 2015 and on June 1, 2015, MassDOT convened the initial meeting. This meeting was attended by representatives from MassDOT, MEPA, Energy and Environmental Affairs, MGC, City of Everett, City of Somerville, and the Proponent.

At this initial meeting on June 1st, the Secretary of Transportation made a brief statement noting that Sullivan Square/Rutherford Avenue has been a problem for a long time and improvements are made more urgent by the Project. The Secretary observed that she would continue to encourage attendance by all stakeholders.

A number of productive suggestions were made during the meeting, including the use of a third-party facilitator to further the planning process and reconcile the different data sets relative to the intersection. The Mayor of Everett and representatives from the City of Somerville opined that future development in their respective cities is facilitated by viable long-term improvements to the corridor. The Mayor of Everett strongly encouraged participation by all parties.

Immediately following the meeting, the City of Boston issued a statement citing the litigation between the City of Boston and the MGC as the reason why the City of Boston failed to attend the meeting scheduled by the Secretary of Transportation.

On June 10, 2015, at the request of the Proponent, the Proponent met with the Mayor of Boston, his legal counsel and the Deputy Commissioner of the Boston Transportation Department. At this meeting, the Proponent sought to encourage the Mayor to permit representatives from the Boston Transportation Department to participate in the planning process for the long-term improvements for the Rutherford Avenue corridor, as convened by the Secretary of Transportation. In response, the Mayor's counsel stated that the City of Boston was constrained from participating due to the pending litigation that the City of Boston had instituted against the MGC. The Proponent suggested that all parties could participate without compromising their respective claims against the other participants.

Following the meeting, the Proponent sent an e-mail to the Mayor's counsel proposing an agreement that would enable all stakeholders, including the City of Boston, to participate in the meetings without compromising their respective claims. The Proponent did not receive a response to this e-mail.

On June 18, 2015, at the request of the Proponent, the Proponent met again with the Mayor of Boston. At this meeting, Proponent suggested funding mechanisms for the long-term improvements and reiterated its commitment to meet with the Boston Transportation Department at any time to discuss the Proponent's mitigation for Sullivan Square/Rutherford Avenue or the long-term planning process for the Rutherford Avenue corridor.

As of the date of this filing, despite the Proponent's efforts, the City of Boston has declined to participate in any new discussions regarding the long-term planning process for the Rutherford Avenue corridor.

As the SFEIR Certificate observes, the long-term planning process is dependent on the active and constructive participation by all of the participants. At this juncture, the City of Boston has declined to participate thereby thwarting the efforts of the Secretary of Transportation and the stakeholders to advance the planning process. Notwithstanding, following the filing of this SSFEIR, the Proponent remains willing to meet with, or without, the City of Boston to advance the planning process and will continue to reach out to the City of Boston and other stakeholders and interested community members accordingly.

3.3 PROPOSED PROJECT MITIGATION – SULLIVAN SQUARE

The Proponent has proposed mitigation at Sullivan Square that will provide short-term improvements to the area while the Leadership Coalition is working on the long-term solution for Sullivan Square. The Secretary's scope outlined specific areas of concern regarding this mitigation, and they are addressed in the sections that follow.

3.3.1 USE OF SYNCHRO AND VISSIM

The FEIR and SFEIR relied on Trafficware's Synchro (version 8) software package (the "Synchro") to calculate the average delay and associated Level of Service ("LOS"). The Synchro software is based on the traffic operational analysis methodology of the Transportation Research Board's (TRB's) *2000 Highway Capacity Manual (HCM)*, which is the methodology prescribed by MassDOT for the analysis of signalized and unsignalized intersections.

The second type of microsimulation software is VISSIM. VISSIM provides both a visual and analytical representation of traffic. It is typically used to model complex geometric configurations at signalized intersections to supplement other software models like Synchro.

3.3.2 CAPACITY ANALYSIS AND QUEUE METHODOLOGIES

Synchro and SimTraffic

The criterion for evaluating traffic operations is LOS which is determined by assessing the average delay incurred by vehicles at intersections and along intersection approaches.

To determine whether a Project impact on a potentially affected road will be effectively mitigated, the Proponent compared the LOS for the No Build Condition

(2023) and Build with Mitigation Condition. If the overall LOS in the Build with Mitigation Condition is the same as or better than in the No Build Condition, the Project's impacts on that potentially affected road are considered to be mitigated effectively consistent with the procedures outlined in the Institute of Transportation Engineers' (ITE's) *Transportation Impact Analyses for Site Development.*[1] The volume-to-capacity ("v/c") ratio is a measure of congestion at an intersection approach. A v/c ratio of one or greater indicates that the traffic volume on the intersection approach exceeds capacity.

LOS designations are based on the average delay per vehicle for all vehicles entering an intersection. Table 3-1 displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the condition with the most significant traffic delay. LOS D or better is typically considered acceptable in an urban area.[2] However, LOS E or F is often typical for a stop-controlled minor street that intersects a major roadway.

Table 3-1: Intersection Level of Service (LOS) Criteria

Level of Service (LOS)	Average Stopped Delay (seconds/vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

SimTraffic is companion software to Synchro. It provides a microsimulation of traffic, allowing the generation of reports of the simulations runs, including queue lengths over time. During the Proponent's post-FEIR consultation with MassDOT, MassDOT requested that the Proponent use SimTraffic, rather than Synchro, to determine vehicle queue lengths in the Study Area. Accordingly, the Proponent has used SimTraffic simulation to generate 50th and 95th percentile queues for each signalized location in the Study Area. The results have been provided to and reviewed by MassDOT.

The 50th percentile queue length, measured in feet, represents the average extent of the vehicle queue (to the last stopped vehicle) from the stop line during 50% of all

[1] Institute of Transportation Engineers, *Transportation Impact Analyses for Site Development* (Washington D.C., 2005).
[2] MassDOT, *Traffic Impact Assessment Guidelines,* March 13, 2014.

signal cycles. The 50th percentile queue will be seen during most cycles. The queue would be this long about 50% of the time, typically during off-peak hours.

The 95th percentile queue length, measured in feet, represents the farthest extent of the vehicle queue (to the last stopped vehicle) from the stop line during the 5% of signal cycles with the longest queues. The 95th percentile queue will not be seen during most cycles. In other words, the queue would be this long only 5% of the time, typically during peak hours.

To generate the SimTraffic queue outputs, the program seeded the network for a total of 15 minutes, and simulated the network for a one-hour duration, per MassDOT's *A Guide on Traffic Analysis Tools,* updated October 5, 2012. For the current analyses, each simulation was run five times. The averages of the five runs for both 50th and 95th percentile queues are reported in the capacity analysis summary tables.

3.3.3 UPDATED TRAFFIC VOLUMES

The volume network inaccuracies in the Sullivan Square graphics contained in the SFEIR have been corrected. There were missing background trips throughout the roadway network, which have been added to the networks. The volume figures provided in the SFEIR have been revised to indicate the correct entering and exiting volumes of the rotary. The reported volumes at Alford Street and Main Street have also been updated.

In addition, the City of Boston requested that a.m. peak hour volumes be provided. Twelve-hour counts were conducted from 7:00 a.m. – 7:00 p.m. and the a.m. peak volumes were gathered. Within these periods, the Friday a.m. peak hour occurs between 8:00-9:00 a.m.

Volume diagrams for Sullivan Square in the Existing (2014) Friday a.m., Friday p.m., and Saturday afternoon peak hours are shown in Figure 3-2, Figure 3-3, and Figure 3-4, respectively. The No Build (2023) Friday a.m., Friday p.m., and Saturday afternoon peak hour volumes at Sullivan Square are shown in Figure 3-5, Figure 3-6, and Figure 3-7, respectively. The Project-generated trips for the Friday a.m. peak hour are shown in Figure 3-8. The Project-generated trips for the Friday p.m. peak hour are shown in Figure 3-9, and the Saturday afternoon peak hour Project-generated trips are shown in Figure 3-10. The Friday p.m. "real" peak hour project-generated trips are shown in Figure 3-11. The Build (2023) Friday a.m., Friday p.m., and Saturday afternoon peak hour volumes, which add the updated Project-generated trips to the No Build volumes, are shown in Figure 3-12, Figure 3-13, and Figure 3-14, respectively. The Build (2023) Friday p.m. "real" peak hour volumes are shown in Figure 3-15. Traffic volumes in the Build (2023) Condition with Mitigation for the Friday a.m. peak hour, Friday p.m. peak hour, Saturday afternoon

peak hour, and Friday "real" peak hour are shown in Figure 3-16, Figure 3-17, Figure 3-18, and Figure 3-19, respectively.

3.3.4 A.M. PEAK HOUR ANALYSIS

Per the request by the City of Boston, the Proponent has analyzed (a) the current a.m. peak hour traffic operations on the potentially affected roads in the Sullivan Square study area, (b) the anticipated traffic operations in the Sullivan Square study area in the future without the Project (the No Build Condition); (c) the anticipated traffic operations in the Sullivan Square study area with the Project (the Build Condition); and (d) the anticipated traffic operations in the Sullivan Square study area with the Project and the traffic mitigation measures the Proponent proposes (the Build with Mitigation Condition).

Capacity analysis summary tables (CASTs) are provided in Table 3-2. The CASTs provide the operations summary (including LOS, delay, volume to capacity (v/c) ratio, and 50th/95th percentile queue lengths) for the Friday a.m. peak hour. Detailed Synchro outputs are provided in Appendix D.

Existing Conditions

During the Friday a.m. peak hour, all intersections operate at an acceptable overall LOS D or better under existing conditions; however, there are two approaches at Main Street/Maffa Way/Cambridge Street/Alford Street that operate at LOS E . The Maffa Way eastbound through lanes and the Alford Street southbound left-turn lanes operate at LOS E. Heavy delays along these approaches are due to high commuter traffic in the a.m. peak hour compared to the amount of green time provided for those movements.

No Build Conditions

Under the No Build Conditions, in the Friday a.m. peak hour, the overall LOS at Cambridge Street/I-93 Northbound off-Ramp and Main Street/Maffa Way/Cambridge Street/Alford Street will worsen due to the addition of background traffic after completion of future developments.

At Cambridge Street/I-93 Northbound off-Ramp, the overall LOS will worsen from LOS C to LOS E under the No Build Conditions after completion of future developments. This is due to the additional background traffic using the I-93 Northbound off-ramp northbound right-turn lane, which will cause its LOS to worsen from LOS D to LOS F.

At Main Street/Maffa Way/Cambridge Street/Alford Street, the overall LOS worsens from LOS D to LOS F under No Build Conditions. This is due to additional

background traffic using both the Maffa Way eastbound through lanes and the Alford Street southbound left-turn lanes, which will cause those lane groups' LOS to worsen from LOS E to LOS F.

Build Conditions

Under the Build Conditions during the Friday a.m. peak hour, the overall LOS at Cambridge Street/I-93 Northbound off-ramp will worsen from LOS E to LOS F, and Main Street/Maffa Way/Cambridge Street/Alford Street will continue to operate at LOS F with the addition of Project-generated traffic.

At Cambridge Street/I-93 Northbound off ramp, the overall LOS will worsen from LOS E to LOS F, after the addition of Project-generated trips. This is due to the additional trips turning right from the I-93 Northbound off-ramp northbound approach as well as additional traffic on the Cambridge Street eastbound and westbound approaches.

At Main Street/Maffa Way/Cambridge Street/Alford Street will continue to operate at LOS F, after the addition of Project-generated trips. The Cambridge Street northbound approach will worsen from LOS D to LOS E.

Build Mitigated Conditions

Under Build Mitigated Conditions, all of the study area intersections are improved during the Friday a.m. peak hour. The only signalized intersection in Sullivan Square, Main Street/Maffa Way/Cambridge Street/Alford Street will be significantly improved by the implementation of the improvements. Main Street/Maffa Way/Cambridge Street/Alford Street will continue to operate at an overall LOS F, but the overall delay is reduced by approximately 35 seconds during the Friday a.m. peak hour after completion of the proposed reconstruction. The Maffa Way eastbound approach will continue to operate at LOS F, but the delay to the Maffa Way eastbound approach is approximately 45 seconds less during the Friday a.m. peak hour. The Alford Street southbound approach will continue to operate at LOS F, but the delay will be approximately 62 seconds less following the construction of the proposed improvements during the Friday a.m. peak hour.

The intersection of Cambridge Street/I-93 Northbound off-ramp will improve from LOS E under No Build (2023) conditions to LOS C in the Build Mitigated (2023) conditions.

3.3.5 CONCLUSIONS

The proposed improvements at Sullivan Square will improve traffic operations in the a.m. peak hour as well as at other times of day as analyzed in the SFEIR. Traffic

operations at the two existing signalized intersections, Main Street/Maffa Way/Cambridge Street/Alford Street and Cambridge Street/I-93 Northbound off-ramp will both be improved. These improvements will provide short-term relief to the existing traffic situation while the cities of Boston, Everett, and Somerville, MassDOT, and the Proponent work together toward a long-term solution for Sullivan Square.

Table 3-2: Capacity Analysis Summary, Friday a.m. Peak Hour, Sullivan Square, Boston

Intersection	Existing (2014) Conditions						No Build (2023) Conditions						Build (2023) Conditions						Build (2023) with Mitigation Conditions					
	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)
52. (S) Cambridge Street/I-93 NB off-Ramp/Sullivan Station	**C**	**22.5**					**E**	**66.8**					**F**	**92.7**					**C**	**29.6**				
Cambridge Street EB thru | thru	B	11.1	0.31	108	198	590	B	13.6	0.39	129	207	590	B	13.6	0.40	126	204	590	B	18.9	0.40	179	304	590
Cambridge Street WB thru | thru	B	11.3	0.34	96	188	475	B	13.4	0.38	117	236	475	B	13.4	0.38	113	227	475	C	29.0	0.45	160	251	158
I-93 NB ramp NB left	C	27.9	0.54	113	208	>800	C	26.7	0.52	411	700	>800	C	26.7	0.52	490	640	>800	-	-	-	-	-	-
I-93 NB ramp NB left/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	36.3	0.80	245	361	>800
I-93 NB ramp NB right	D	51.8	0.90	169	291	>800	F	195.9	1.33	479	623	>800	F	267.5	1.50	519	557	>800	D	39.1	0.82	172	287	>800
Sullivan Station Bus Driveway SB right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	48.5	0.01	9	33	
53a. (S) Main Street/Maffa Way/Cambridge Street/Alford Street	**D**	**51.3**					**F**	**109.2**					**F**	**121.0**					**F**	**86.7**				
Maffa EB thru | thru | thru	E	72.4	1.03	483	541	>800	F	144.1	1.22	507	529	>800	F	164.5	1.26	507	528	>800	-	-	-	-	-	-
Maffa EB thru | thru | thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	F	98.5	1.12	276	287	215
Maffa EB right	C	29.7	0.16	113	282	195	C	30.0	0.19	176	341	195	C	30.0	0.19	178	344	195	-	-	-	-	-	-
Cambridge NB right | right	D	36.9	0.80	179	255	485	D	47.3	0.92	201	257	485	E	61.0	0.99	207	256	485	D	36.9	0.70	122	122	290
Alford SB left | left	E	60.4	0.79	162	240	330	F	219.6	1.34	388	532	330	F	219.6	1.34	412	526	330	F	157.0	1.21	449	449	700
Alford SB thru | thru	B	12.5	0.29	130	202	330	B	12.8	0.32	278	541	330	B	12.8	0.32	276	546	330	C	29.2	0.58	411	411	430
58. (U/S*) Cambridge Street/Spice Street/Sullivan Square Station Drive	-	-					-	-					-	-					A	**9.2**				
Cambridge EB left	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	4.9	0.47	84	161	175
Cambridge EB thru |thru/right	A	1.2	0.30	37	118	175	A	1.3	0.44	47	131	175	A	1.2	0.47	59	160	175	A	3.1	0.38	34	108	175
Cambridge WB left/thru | thru/right	A	0.5	0.20	11	50	210	A	0.7	0.22	20	89	210	A	0.7	0.22	16	80	210	A	4.4	0.49	45	110	210
Spice NB left/thru/right	C	19.7	0.12	15	44	465	C	17.6	0.25	28	57	465	C	19.4	0.28	33	67	465	D	42.0	0.08	33	69	465
Sullivan Square Station SB left/thru/right	C	18.8	0.02	0	4	100	C	23.1	0.02	0	4	100	C	24.8	0.02	1	7	100	E	62.2	0.16	35	74	350
59. (S) Maffa Way/Beacham Street Ext																			A	**9.3**				
Maffa EB left/thru | thru | thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	8.2	0.78	306	328	300
Beacham NB thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	19.9	0.56	108	210	115
60. (S) Main Street/Beacham Street																			A	**5.8**				
Main WB thru | thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	7.1	0.45	108	184	>800
Beacham Extension NB left	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	0.2	0.07	33	85	115
Beacham Extension NB left/thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	0.2	0.07	36	95	115
61. (S) Maffa Street/MBTA Bus Only Lane																			A	**5.9**				
Maffa EB thru | thru | thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	5.3	0.64	148	171	>800
Bus Only NB right																			A	20.8	0.05	70	125	150
Bus Only SB thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	D	27.4	0.57	53	116	115
62. (U)Spice Street/D Street																			A	**8.8**				
D Street EB left/thru	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	0.0	0.00	0	0	380
D Street WB thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	0.0	0.00	0	0	400
Spice Street SB left/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	8.8	0.28	41	61	450
63. (U) D Street/Rutherford Avenue																			A	**5.3**				
D Street EB right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	E	38.8	0.72	65	113	380
Rutherford SB thru| thru/right	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	A	0.0	0.61	0	0	280

1. Queue shown is the longest reported average for the movement/approach. Queues derived from average of five SimTraffic simulations.

(S) signalized intersection (U) unsignalized intersection

3.4 CITY OF MEDFORD

3.4.1 MYSTIC VALLEY PARKWAY (ROUTE 16)/I-93 EXIT 31

The intersections of Mystic Valley Parkway (Route 16)/Mystic Avenue (Route 38)/Harvard Street and Mystic Valley Parkway (Route 16)/Route 16 Connector are closely spaced signalized intersections located approximately 350 feet apart. Due to the proximity of the intersections, they operate on the same signal controller; the operations at one intersection are generally impacted by the other intersection.

In the SFEIR, the Proponent proposed adjusting signal timing at these intersections in the Build (2023) with Mitigation Conditions. The SSFEIR proposes signal phasing changes that will further improve traffic operations by allowing more vehicles to move through the intersection at once. The existing signal phasing separates the Harvard Street eastbound and Mystic Valley Parkway westbound movements, which allows for conflict-free left turns from Mystic Valley Parkway westbound onto Mystic Avenue (Route 38). However, this phasing limits the amount of green time that the Mystic Valley Parkway (Route 16) westbound through movements receive, since these vehicles receive a red light when Harvard Street has a green light.

The proposed phasing scheme maintains the same lane configuration as the existing conditions, and gives the Mystic Valley Parkway westbound left-turn lane a protected left turn phase, during which all lanes on Harvard Street receive a red light. This is followed by a phase in which all Harvard Street eastbound and Mystic Valley Parkway (Route 16) westbound vehicles have a green light; Harvard Street eastbound and Mystic Valley Parkway westbound left-turning vehicles must yield to oncoming traffic. Finally, the Mystic Valley Parkway westbound approach receives a red light, allowing for a brief period in which Harvard Street eastbound traffic, including left-turning vehicles, may proceed without conflict. This phasing greatly improves operations for Mystic Valley Parkway westbound through and right-turning vehicles and is beneficial to several other movements, without adding significant delay to the remaining movements. The Proponent will continue to work with MassDOT, DCR, and the City of Medford to refine the improvements through the design process.

For the reader's convenience, the traffic volume figures are provided in this chapter. They have not changed since the filing of the SFEIR. Figure 3-20 and Figure 3-21 show the Existing (2013) Conditions traffic volumes for the Friday p.m. and Saturday afternoon peak hours, respectively. No Build (2023) Conditions traffic volumes are shown in Figure 3-22 for the Friday p.m. peak hour and in Figure 3-23 for the Saturday afternoon peak hour. Project-generated vehicle trips are shown in Figure 3-23 for the Friday p.m. peak hour, Figure 3-25 for the Saturday afternoon peak hour, and Figure 3-26 for the Friday p.m. "real" peak hour. Figure 3-27, Figure 3-28, and

Figure 3-29 show the Build (2023) Conditions traffic volumes for the Friday p.m., Saturday afternoon, and Friday p.m. "real" peak hours, respectively.

3.4.1.1 TRAFFIC OPERATIONS

Traffic operations under the Existing (2013) Conditions, No Build (2023) Conditions, and Build (2023) Conditions have not changed since filing the SFEIR. The Build (2023) with Mitigation Conditions analysis has been updated to reflect proposed additional mitigation at these locations, as described previously.

Harvard Street/Mystic Valley Parkway/Mystic Avenue (Route 38)

This intersection will continue to operate at LOS E overall but with 15 seconds less overall delay under the Build Mitigated Conditions during the Friday p.m. peak hour as compared to the No Build Conditions. Two approaches will experience reductions in LOS compared to the No Build (2023) Conditions. However, the phasing and timing changes result in less delay for other movements and thus, overall improvement at the intersection.

The overall intersection LOS will improve from LOS E under No Build Conditions to LOS C under Build Mitigated Conditions in the Saturday afternoon peak hour.

The overall intersection LOS will remain at LOS E during the Friday p.m. "real" peak hour under Build Mitigated Conditions, but motorists will experience approximately 17 seconds less delay on average as compared to No Build Conditions.

Mystic Valley Parkway/Mystic Avenue (Route 38)

At the intersection of Mystic Valley Parkway (Route 16)/Route 16 Connector, the overall LOS will not change from the No Build (2023) Conditions to the Build (2023) with Mitigation Conditions, remaining at LOS E in the Friday p.m. peak hour. However, motorists will experience approximately 16 seconds less delay overall at the intersection once the improvements are in place.

During the Saturday afternoon peak hour, the intersection will continue to operate at LOS D under the Build (2023) with Mitigation COnditons as compared to the No Build Conditions.

The intersection will improve to LOS D under the Build (2023) with Mitigation Conditions, as compared to LOS E overall under the No Build

Conditions. The Route 16 Connector southbound left-turn lanes do not improve in LOS, but the lane group's delay is reduced by 8 - 66 seconds in each scenario.

The Build (2023) with Mitigation Conditions analysis shows that the proposed improvements generally improve traffic operations through the intersections compared to the No Build (2023) conditions. Overall delay is generally reduced by at least 15 seconds, with the exception of the intersection of Mystic Valley Parkway (Route 16)/Route 16 connector in the Saturday afternoon peak hour, when delay increases by just over one second. At the intersection of Harvard Street/Mystic Valley Parkway (Route 16)/Mystic Street (Route 38), the Mystic Avenue (Route 38) northbound and southbound approaches each operate better in the Build (2023) with Mitigation Conditions than in the No Build (2023) Conditions in every scenario, improving access to the surrounding neighborhoods. The proposed phasing changes and signal optimization mitigate the impact of Project traffic flowing through these intersections.

The CASTs for the Friday p.m., Saturday afternoon, and Friday p.m. "real" peak hours are shown in Table 3-3, Table 3-4 and Table 3-5. Synchro output is included in Appendix E.

Table 3-3: Capacity Analysis Summary, Friday p.m. Peak Hour, Selected Intersections, Medford

Intersection	Existing (2013) Conditions						No Build (2023) Conditions						Build (2023) Conditions						Build (2023) with Mitigation Conditions					
	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)
38. (S) Harvard Street/Mystic Valley Parkway (Route 16)/ Mystic Avenue (Route 38)	**E**	**63.7**	**0.90**	**–**	**–**	**–**	**E**	**72.6**	**0.96**	**–**	**–**	**–**	**E**	**74.2**	**0.97**	**–**	**–**	**–**	**E**	**56.7**	**1.02**	**–**	**–**	**–**
Harvard EB left/thru | thru/right	D	43.3	0.70	220	308	>800	D	44.6	0.75	225	315	>800	D	44.6	0.75	227	318	>800	E	60.3	0.92	445	659	>800
Route 16 WB left	D	47.9	0.85	194	232	150	D	54.3	0.90	195	222	150	D	54.2	0.90	195	229	150	F	112.1	1.12	191	222	150
Route 16 WB thru	D	54.8	0.91	274	286	250	E	65.3	0.97	274	288	250	E	65.2	0.97	273	286	250	B	14.3	0.59	243	351	250
Route 16 WB right	D	48.3	0.31	78	147	250	D	42.8	0.38	79	151	250	D	42.7	0.39	83	156	250	A	4.1	0.35	62	161	250
Route 38 NB left	E	67.3	0.68	90	152	75	E	70.5	0.72	93	152	75	E	70.5	0.72	98	152	75	E	59.6	0.62	90	159	75
Route 38 NB thru | thru/right	E	77.3	0.98	225	382	>800	F	95.5	1.05	265	398	>800	F	95.5	1.05	265	418	>800	F	95.5	1.05	319	530	>800
Route 38 SB left	F	213.9	1.26	154	182	110	F	262.8	1.38	159	162	110	F	285.3	1.43	159	162	110	D	48.1	0.62	125	175	110
Route 38 SB thru | thru/right	D	42.2	0.34	459	856	>800	D	42.8	0.38	618	1053	>800	D	42.8	0.38	693	1114	>800	C	32.5	0.26	136	266	>800
39. (S) Mystic Valley Parkway (Route 16)/Route 16 Connector	**D**	**42.5**	**0.73**	**–**	**–**	**–**	**E**	**72.1**	**0.84**	**–**	**–**	**–**	**F**	**90.8**	**0.88**	**–**	**–**	**–**	**E**	**56.0**	**0.88**	**–**	**–**	**–**
Route 16 EB thru | thru	B	12.7	0.44	120	166	300	B	13.9	0.48	130	176	300	B	14.3	0.48	129	180	300	C	25.3	0.60	248	344	300
Route 16 WB thru | thru	B	13.9	0.42	720	987	>800	B	14.5	0.47	813	1060	>800	B	14.6	0.48	790	956	>800	C	23.4	0.58	360	481	>800
Route 16 Connector SB left | left	F	91.4	1.08	387	433	>800	F	169.2	1.27	398	437	>800	F	212.6	1.37	399	428	>800	F	107.4	1.14	270	364	>800
Route 16 Connector SB right	D	35.1	0.57	235	342	>800	D	38.6	0.68	214	324	>800	D	38.8	0.68	196	282	>800	C	31.1	0.62	260	449	>800

Table 3-4: Capacity Analysis Summary, Saturday Afternoon Peak Hour, Selected Intersections, Medford

Intersection	Existing (2013) Conditions						No Build (2023) Conditions						Build (2023) Conditions						Build (2023) with Mitigation Conditions					
	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)
38. (S) Harvard Street/Mystic Valley Parkway (Route 16)/ Mystic Avenue (Route 38)	**E**	**56.3**	**0.72**	**–**	**–**	**–**	**E**	**55.4**	**0.76**	**–**	**–**	**–**	**E**	**57.2**	**0.76**	**–**	**–**	**–**	**C**	**34.0**	**0.78**	**–**	**–**	**–**
Harvard EB left/thru | thru/right	D	40.5	0.59	169	247	>800	D	41.2	0.62	169	241	>800	D	41.2	0.62	175	250	>800	D	45.6	0.73	183	286	>800
Route 16 WB left	D	42.7	0.81	194	231	150	D	49.1	0.87	188	247	150	D	49.0	0.87	194	228	150	D	53.5	0.95	167	230	150
Route 16 WB thru	D	53.9	0.91	274	285	250	E	69.2	0.98	273	288	250	E	69.1	0.98	274	285	250	B	12.8	0.57	184	315	250
Route 16 WB right	D	42.7	0.27	70	146	250	D	38.9	0.34	66	138	250	D	39.3	0.35	74	155	250	A	2.5	0.24	33	105	250
Route 38 NB left	E	62.9	0.59	54	107	75	E	66.4	0.63	55	108	75	E	66.4	0.63	66	123	75	E	66.4	0.63	47	108	75
Route 38 NB thru | thru/right	D	43.3	0.38	92	156	>800	D	44.3	0.44	100	170	>800	D	44.3	0.44	101	167	>800	D	46.6	0.48	92	164	>800
Route 38 SB left	F	219.2	1.27	120	171	110	F	169.3	1.13	136	188	110	F	193.4	1.20	151	183	110	D	46.4	0.55	111	166	110
Route 38 SB thru | thru/right	D	40.9	0.36	164	373	>800	D	40.5	0.32	239	554	>800	D	40.5	0.32	341	651	>800	C	31.9	0.23	100	182	>800
39. (S) Mystic Valley Parkway (Route 16)/Route 16 Connector	**C**	**30.5**	**0.72**	**–**	**–**	**–**	**D**	**38.1**	**0.74**	**–**	**–**	**–**	**E**	**55.4**	**0.79**	**–**	**–**	**–**	**D**	**39.2**	**0.79**	**–**	**–**	**–**
Route 16 EB thru | thru	B	13.2	0.37	95	139	300	B	12.0	0.36	96	141	300	B	12.4	0.37	102	140	300	B	17.3	0.43	139	224	300
Route 16 WB thru | thru	B	14.6	0.48	403	513	>800	B	14.5	0.47	906	1249	>800	B	14.5	0.47	766	1031	>800	C	21.1	0.55	323	471	>800
Route 16 Connector SB left | left	E	57.3	0.96	265	334	>800	E	78.0	1.04	377	447	>800	F	121.2	1.16	398	430	>800	E	69.6	1.02	286	358	>800
Route 16 Connector SB right	D	35.9	0.60	216	320	>800	D	35.8	0.60	237	338	>800	D	35.9	0.60	205	291	>800	C	31.9	0.58	197	326	>800

Table 3-5: Capacity Analysis Summary, Friday p.m. "Real" Peak Hour, Selected Intersections, Medford

Intersection	Existing (2013) Conditions						No Build (2023) Conditions						Build (2023) Conditions						Build (2023) with Mitigation Conditions					
	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)	LOS	Delay (s)	V/C	50% Queue Length[1] (ft)	95% Queue Length[1] (ft)	Storage Area (ft)
38. (S) Harvard Street/Mystic Valley Parkway (Route 16)/ Mystic Avenue (Route 38)	**E**	**63.7**	**0.90**	–	–	–	**E**	**72.6**	**0.96**	–	–	–	**E**	**73.4**	**0.96**	–	–	–	**E**	**54.9**	**1.00**	–	–	–
Harvard EB left/thru | thru/right	D	43.3	0.70	220	308	>800	D	44.6	0.75	225	315	>800	D	44.6	0.75	228	326	>800	E	60.3	0.92	368	593	>800
Route 16 WB left	D	47.9	0.85	194	232	150	D	54.3	0.90	195	222	150	D	54.2	0.90	194	231	150	F	96.3	1.08	191	219	150
Route 16 WB thru	D	54.8	0.91	274	286	250	E	65.3	0.97	274	288	250	E	65.3	0.97	274	290	250	B	13.9	0.58	241	348	250
Route 16 WB right	D	48.3	0.31	78	147	250	D	42.8	0.38	79	151	250	D	42.7	0.39	94	186	250	A	4.2	0.35	63	172	250
Route 38 NB left	E	67.3	0.68	90	152	75	E	70.5	0.72	93	152	75	E	70.5	0.72	98	154	75	E	59.6	0.62	86	158	75
Route 38 NB thru | thru/right	E	77.3	0.98	225	382	>800	F	95.5	1.05	265	398	>800	F	95.5	1.05	245	389	>800	F	95.5	1.05	258	410	>800
Route 38 SB left	F	213.9	1.26	154	182	110	F	262.8	1.38	159	162	110	F	274.0	1.41	159	164	110	D	49.5	0.64	124	175	110
Route 38 SB thru | thru/right	D	42.2	0.34	459	856	>800	D	42.8	0.38	618	1053	>800	D	42.8	0.38	560	922	>800	C	33.3	0.27	114	217	>800
39. (S) Mystic Valley Parkway (Route 16)/Route 16 Connector	**D**	**45.5**	**0.73**	–	–	–	**E**	**72.1**	**0.84**	–	–	–	**F**	**82.5**	**0.86**	–	–	–	**D**	**53.8**	**0.86**	–	–	–
Route 16 EB thru | thru	B	12.7	0.44	120	166	300	B	13.9	0.48	130	176	300	B	14.1	0.48	124	174	300	C	24.7	0.58	235	336	300
Route 16 WB thru | thru	B	13.9	0.42	720	987	>800	B	14.5	0.47	813	1060	>800	B	14.6	0.47	762	981	>800	C	22.6	0.57	345	474	>800
Route 16 Connector SB left | left	F	91.4	1.08	387	433	>800	F	169.2	1.27	398	437	>800	F	193.7	1.33	384	445	>800	F	103.5	1.12	259	260	>800
Route 16 Connector SB right	D	35.1	0.57	235	342	>800	D	38.6	0.68	214	324	>800	D	38.8	0.68	213	315	>800	C	32.0	0.63	247	423	>800

3.4.2 VISSIM MODEL FOR WELLINGTON CIRCLE

Wellington Circle consists of three signalized intersections: Route 16 at Fellsway (Route 28) Southbound (Wellington Circle West), Route 16 at Fellsway (Route 28) Northbound (Wellington Circle East), and Middlesex Avenue at the Fellsway (Route 28) (Wellington Circle North). Wellington Circle currently operates with moderate congestion and queuing under the existing conditions, most notably along the Fellsway (Route 28) northbound and the Route 16 westbound approaches. The VISSIM model provides output for the three signalized intersections within Wellington Circle. Operations at each intersection within Wellington Circle are described in the following paragraphs.

Wellington Circle West –This intersection is expected to operate at an overall LOS D during the Friday p.m. "real" peak hour under Build with Mitigation conditions based on the Synchro analysis. The Route 16 eastbound approach is expected to operate at LOS E and the Fellsway (Route 28) southbound approach at LOS F. The VISSIM results indicate that the overall LOS at this intersection will be LOS E, with the Route 16 eastbound approach operating at LOS F and the Fellsway southbound left-turn and through movements operating at LOS F and LOS E, respectively. The VISSIM model projects longer average queue lengths than the Synchro analysis does.

Wellington Circle East – This intersection is expected to operate at an overall LOS D during the Friday p.m. "real" peak hour under Build with Mitigation conditions, with some movements along the westbound approach and the northbound approach operating at LOS E and LOS F. This intersection currently experiences levels of congestion along all approaches and is currently operating at or near its operating capacity. The VISSIM and Synchro results are consistent, with both analyses showing overall operations at LOS D. Both models also show that the Fellsway (Route 28) northbound and Route 16 eastbound movements experience the highest delays at the intersection.

Wellington Circle North – This intersection is expected to operate at an overall LOS B during the Friday p.m. "real" peak hour under Build with Mitigation conditions. Both models show that this intersection operates below capacity with little delay. Both models also show that the Middlesex Avenue approach will experience the most delay at the intersection and operate at a LOS D.

The VISSIM model shows some benefit to the additional through lanes along both directions of Route 16 and the Fellsway (Route 28) northbound, although operations at Wellington Circle will remain congested and will continue to experience some level of queuing. As MassDOT noted in their comment letter on the FEIR, the proposed improvements generally return LOS and delay to pre-existing conditions.

The Proponent has committed to provide funding for a study of long-term alternatives at Wellington Circle.

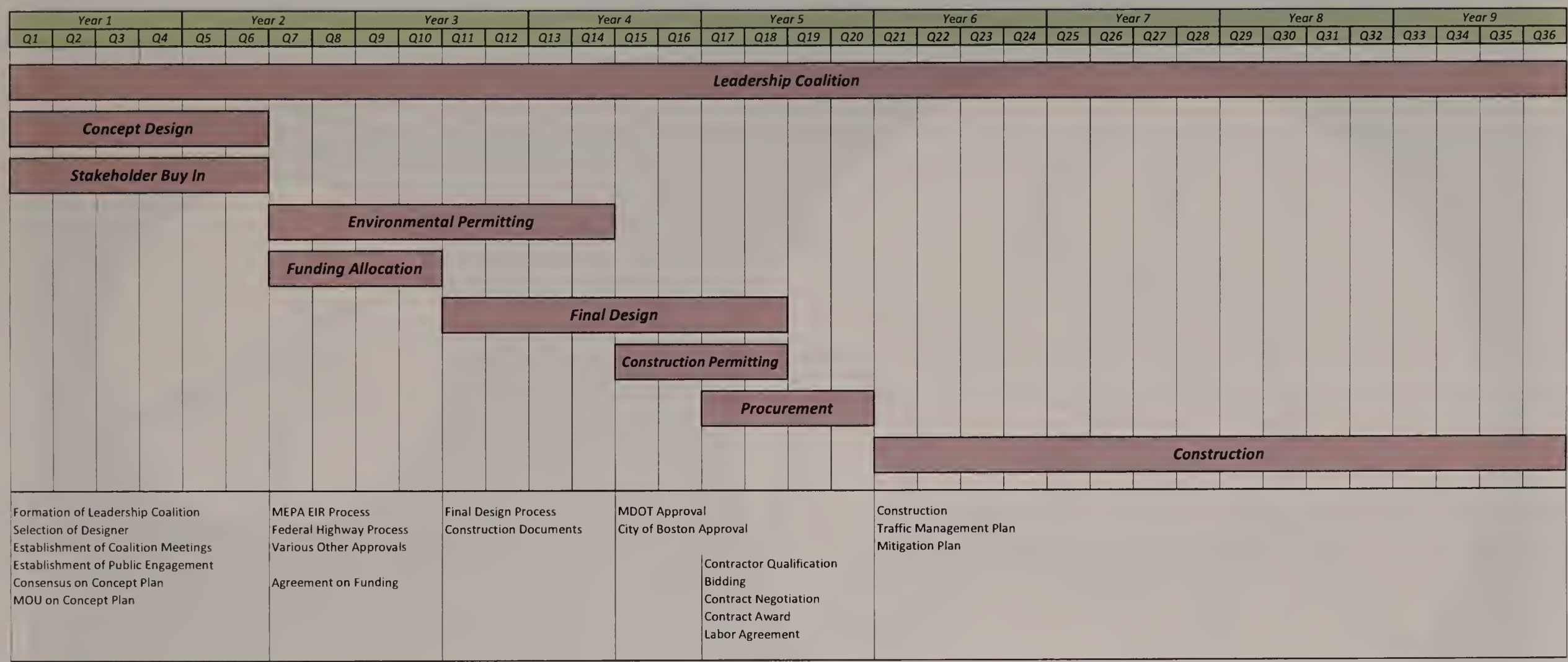
Table 3-6 shows a comparison between the Friday p.m. peak hour Build with Mitigation Conditions analysis as reported by VISSIM and Synchro.

3.4.3 CONCLUSIONS

The Build (2023) with Mitigation Conditions analysis shows that the proposed improvements generally improve traffic operations through the intersections compared to the No Build (2023) conditions. The proposed phasing changes and signal optimization mitigate the impact of Project traffic flowing through these intersections.

Table 3-6: Capacity Analysis Comparison, Build (2023) with Mitigation Conditions, Friday p.m. Peak Hour, Wellington Circle, Medford

Movement	VISSIM Analysis				Synchro Analysis			
	Observed Volume	Average Delay (s)	LOS	Average Queue (ft)	Input Volume	Average Delay (s)	LOS	Average Queue (ft)
Wellington Circle West Overall	–	**75.0**	**E**	–	–	**50.0**	**D**	–
Rte. 16 EB left	71	552.0	F	1213.5	1925	65.5	E	343.0
Rte. 16 EB thru	437	144.9	F	1372.5				
Rte. 16 EB right	44	66.1	E	1347.8	169			
Rte. 16 WB u-turn	34	48.9	D	210.0	100	48.2	D	338.0
Rte. 16 WB left	468	55.1	E	210.0	1136			
Rte. 16 WB thru	716	9.9	A	80.7	1688	5.7	A	71.0
Fellsway SB left	226	156.2	F	1121.3	597	48.0	D	142.0
Fellsway SB thru	210	68.2	E	567.1	483	86.6	F	212.0
Fellsway SB right	34	18.0	B	34.2	71			
Middlesex SB left to Fellsway SB	150	59.3	E	202.4	144	96.4	F	122.0
Middlesex SB left to 16 EB	44	101.7	F	202.4	323			
Middlesex SB thru to 16 WB	43	50.0	D	202.4	85			
Wellington Circle East Overall	–	**40.4**	**D**	–	–	**40.0**	**D**	–
Rte. 16 EB left to Fellsway	10	376.9	F	182.2	74	64.2	E	124.0
Rte. 16 EB left to Middlesex	58	392.8	F	182.2	258			
Rte. 16 EB thru	733	10.1	B	201.8	2452	9.0	A	161.0
Rte. 16 EB left	504	95.2	F	1129.9	2512	36.6	D	406.0
Rte. 16 WB thru	548	30.3	C	434.3		91.7		
Rte. 16 WB right to Fellsway	270	18.3	B	404.8	594	26.9	F	491.0
Rte. 16 WB right to Middlesex	37	15.6	B	404.8	76			
Fellsway NB left to 16 WB	155	60.7	E	1524.3	479		C	131.0
Fellsway NB thru	555	65.5	E	1524.3	1023	44.9	D	355.0
Fellsway NB thru to Middlesex	341	51.6	D	1524.3	613	80.1	F	462.0
Fellsway NB right	700	13.7	B	1231.3	1223	55.0	E	477.0
Wellington Circle North Overall	–	**18.3**	**B**	–	–	**15.1**	**B**	–
Fellsway NB thru	829	8.5	A	269.3	1578	5.6	A	122.0
Middlesex SB thru	247	52.1	D	392.1	529	36.9	D	118.0



Coalition Members:

Federal - Elected Leadership (House and Senate), FHWA
State - Elected Leadership (Governor, House, and Senate), Appointed Leadership (Cabinet), MDOT, DEP
Local - Elected Leadership (Mayors and City Counselors) and staff from Boston, Somerville, Everett, Medford, and Cambridge

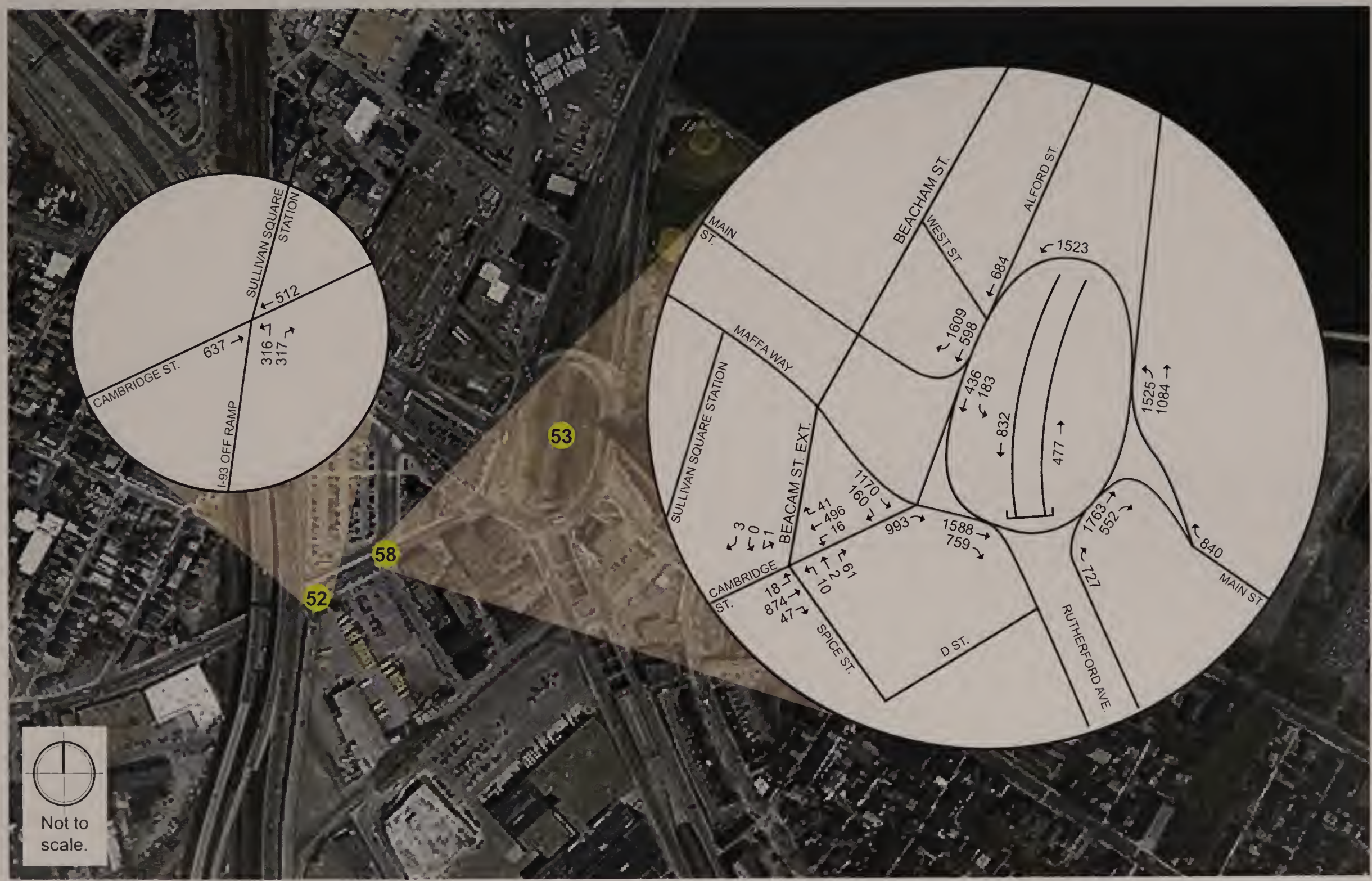
Stakeholders:

Residents, Commuters, and Businesses

Figure 3-1
Sullivan Square-Rutherford Avenue Long-term Improvement Project Timeline
Source: Dirigo Group, 2015

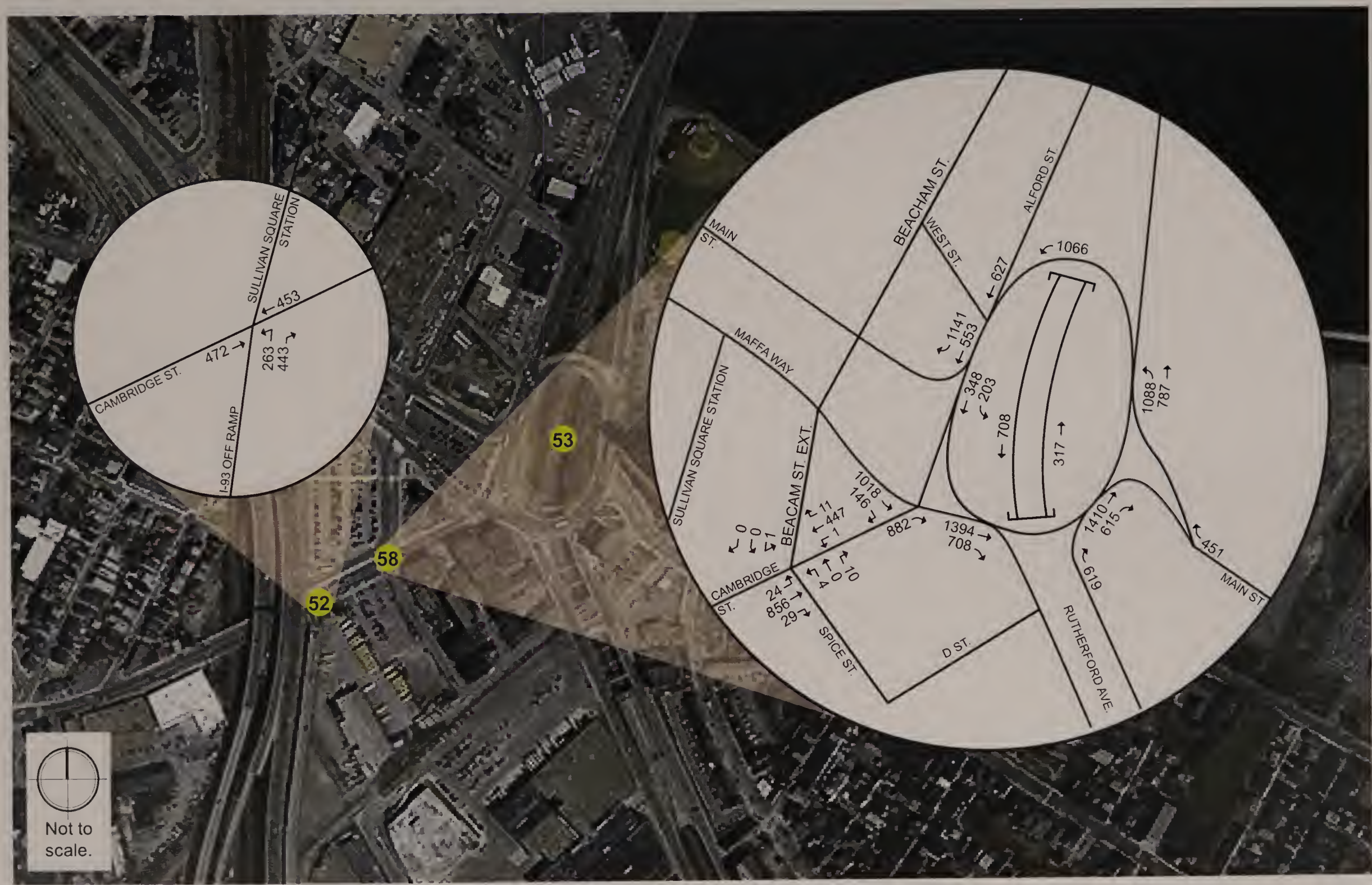
Wynn Resort in Everett
Everett, Massachusetts

Figure 3-2
Existing (2014) Conditions Friday a.m. Peak Hour Traffic Volumes (8:00-9:00 a.m.), Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Resort in Everett
Everett, Massachusetts

Figure 3-3
Existing (2014) Conditions Friday p.m. Peak Hour Traffic Volumes (4:30-5:30 p.m.), Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015



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Everett, Massachusetts

Figure 3-4
Existing (2014) Conditions Saturday Afternoon Peak Hour Traffic Volumes (2:45-3:45 p.m.), Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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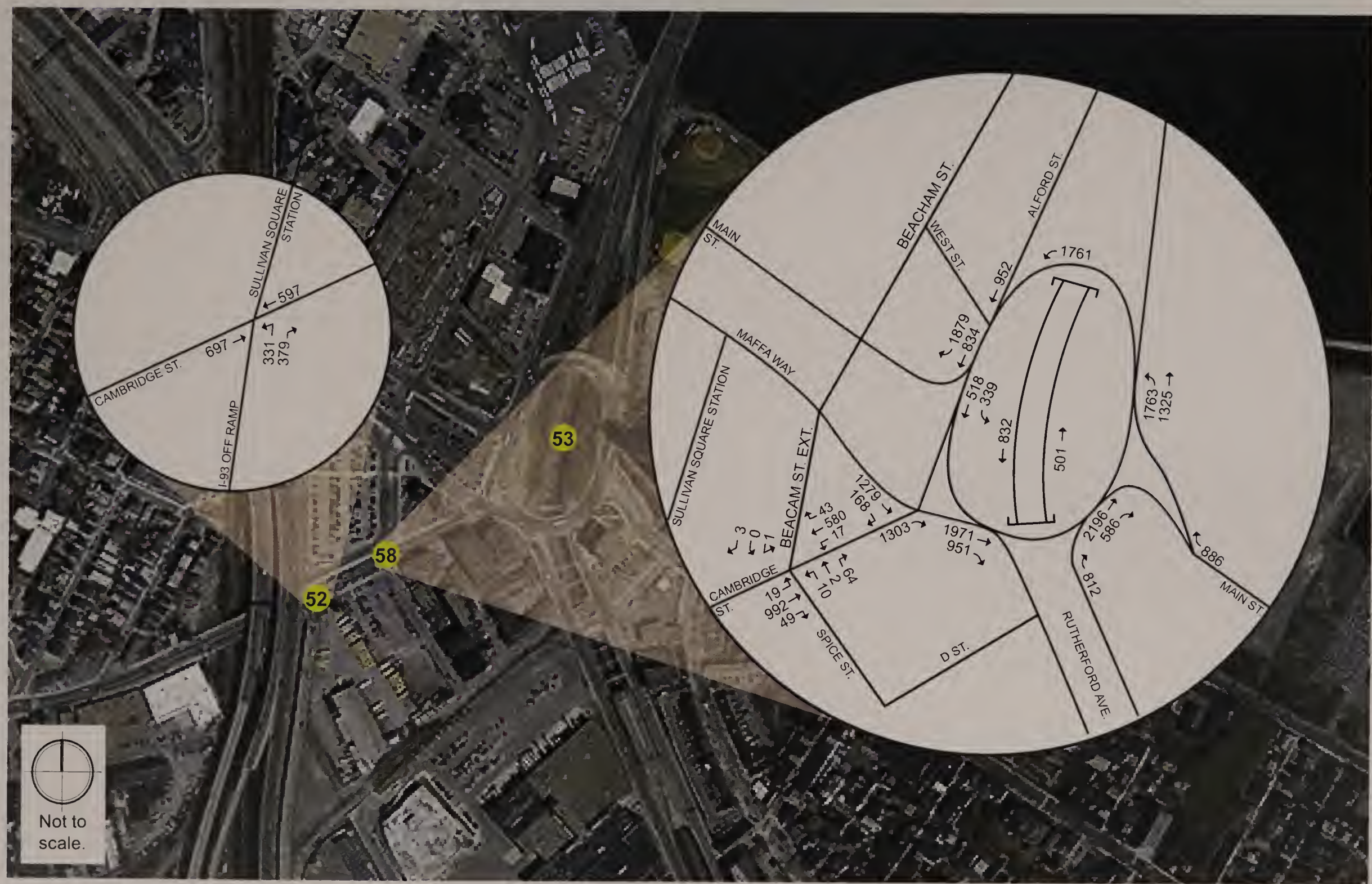
Everett, Massachusetts

Figure 3-5
No Build (2023) Conditions Friday a.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015



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Everett, Massachusetts

Figure 3-6
No Build (2023) Conditions Friday p.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Everett, Massachusetts

Figure 3-7
No Build (2023) Conditions Saturday Afternoon Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Everett, Massachusetts

Figure 3-8
Friday a.m. Peak Hour Project-generated Trips, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

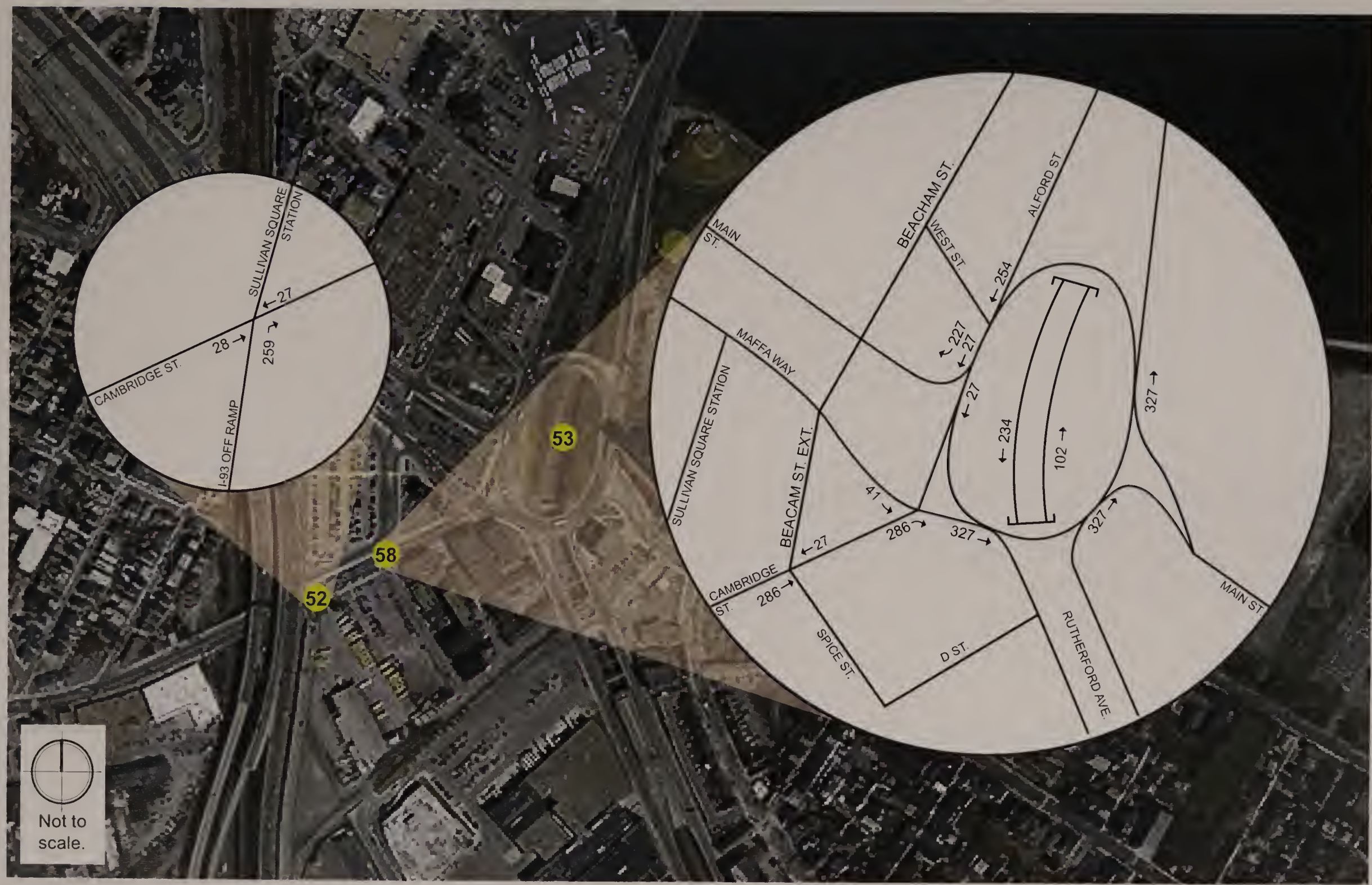

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Figure 3-9
Friday p.m. Peak Hour Project-generated Trips, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

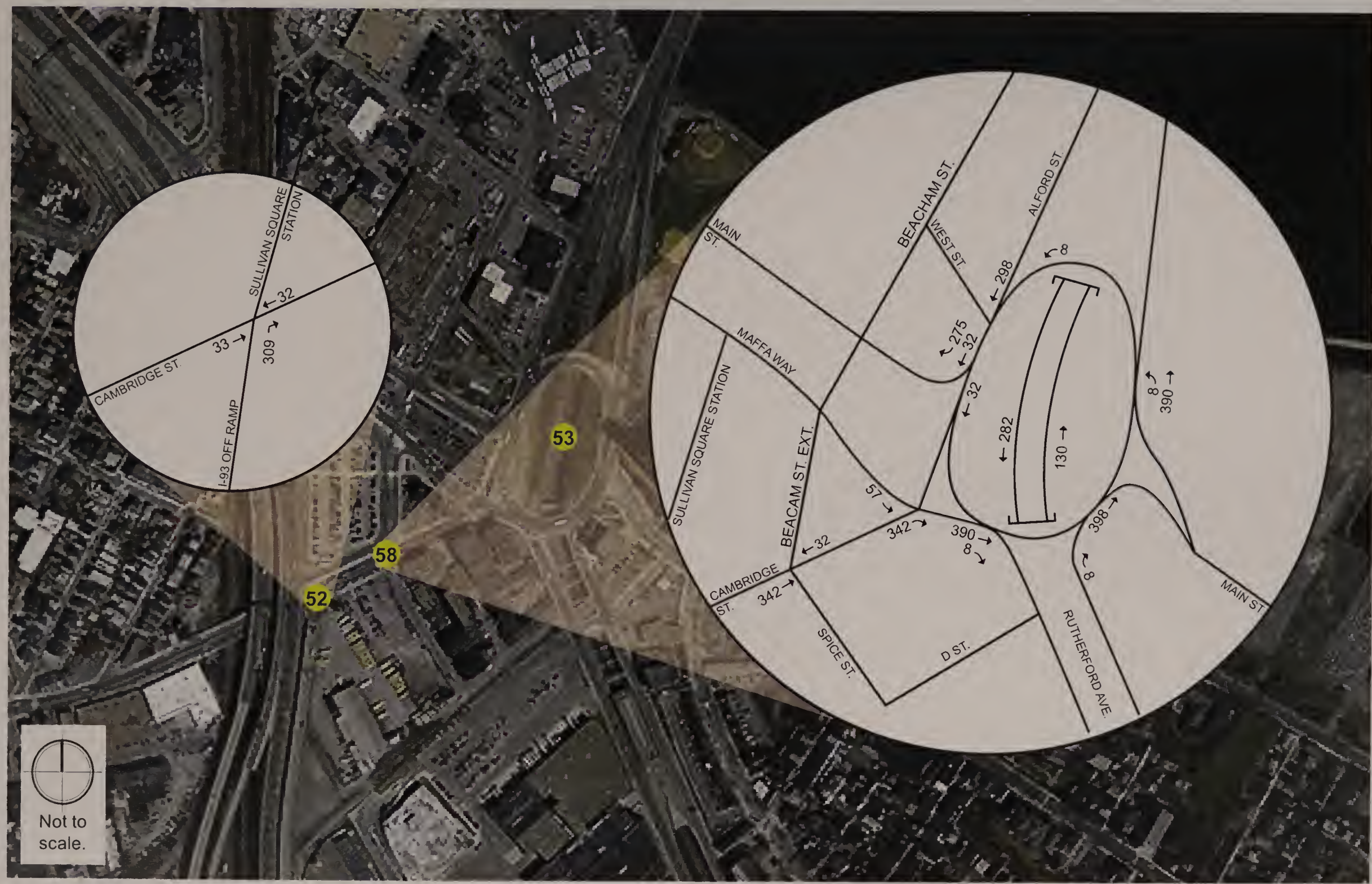

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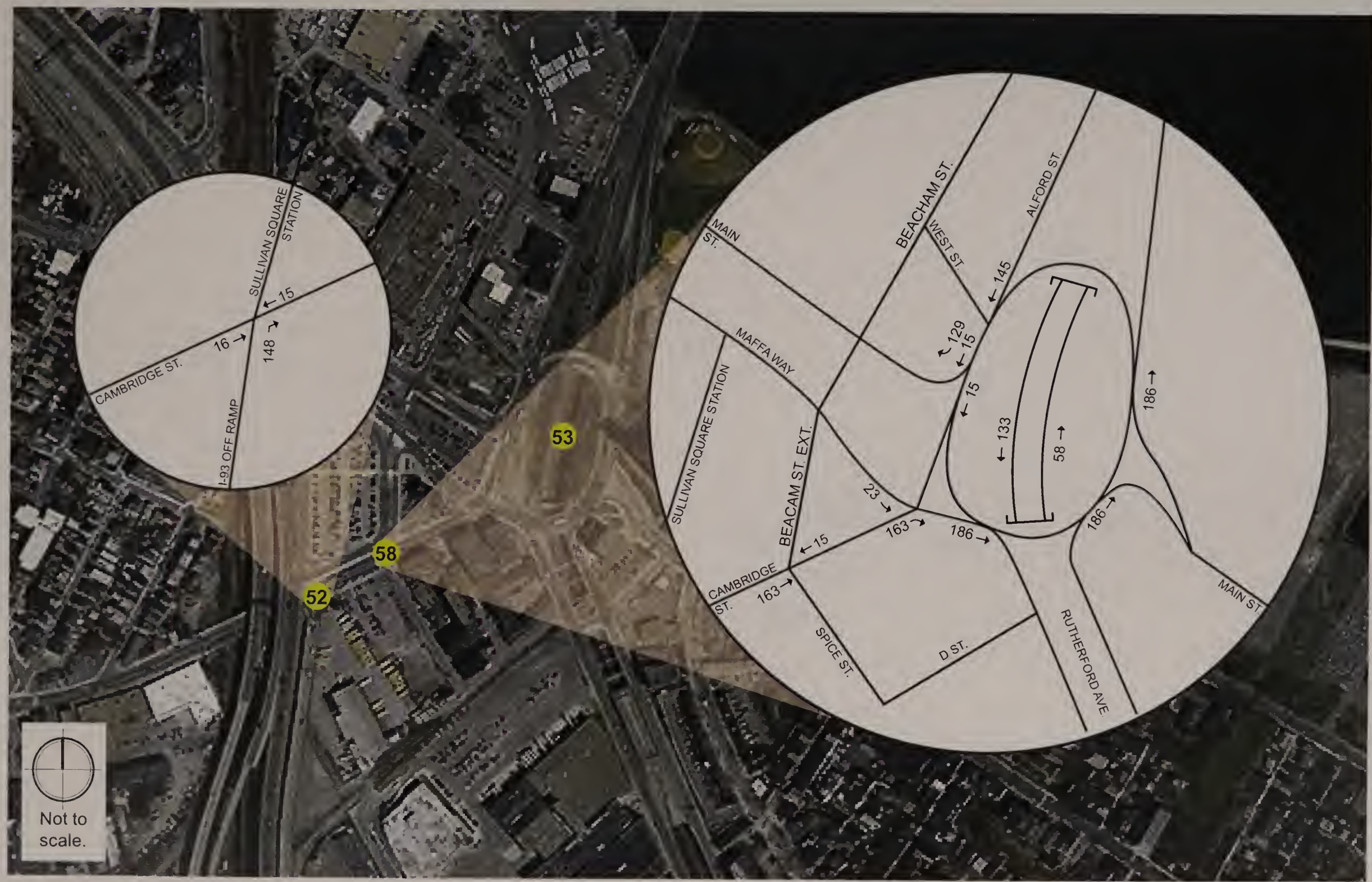
Figure 3-10
Saturday Afternoon Peak Hour Project-generated Trips, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015



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Everett, Massachusetts

Figure 3-11
Friday p.m. "Real" Peak Hour Project-generated Trips, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

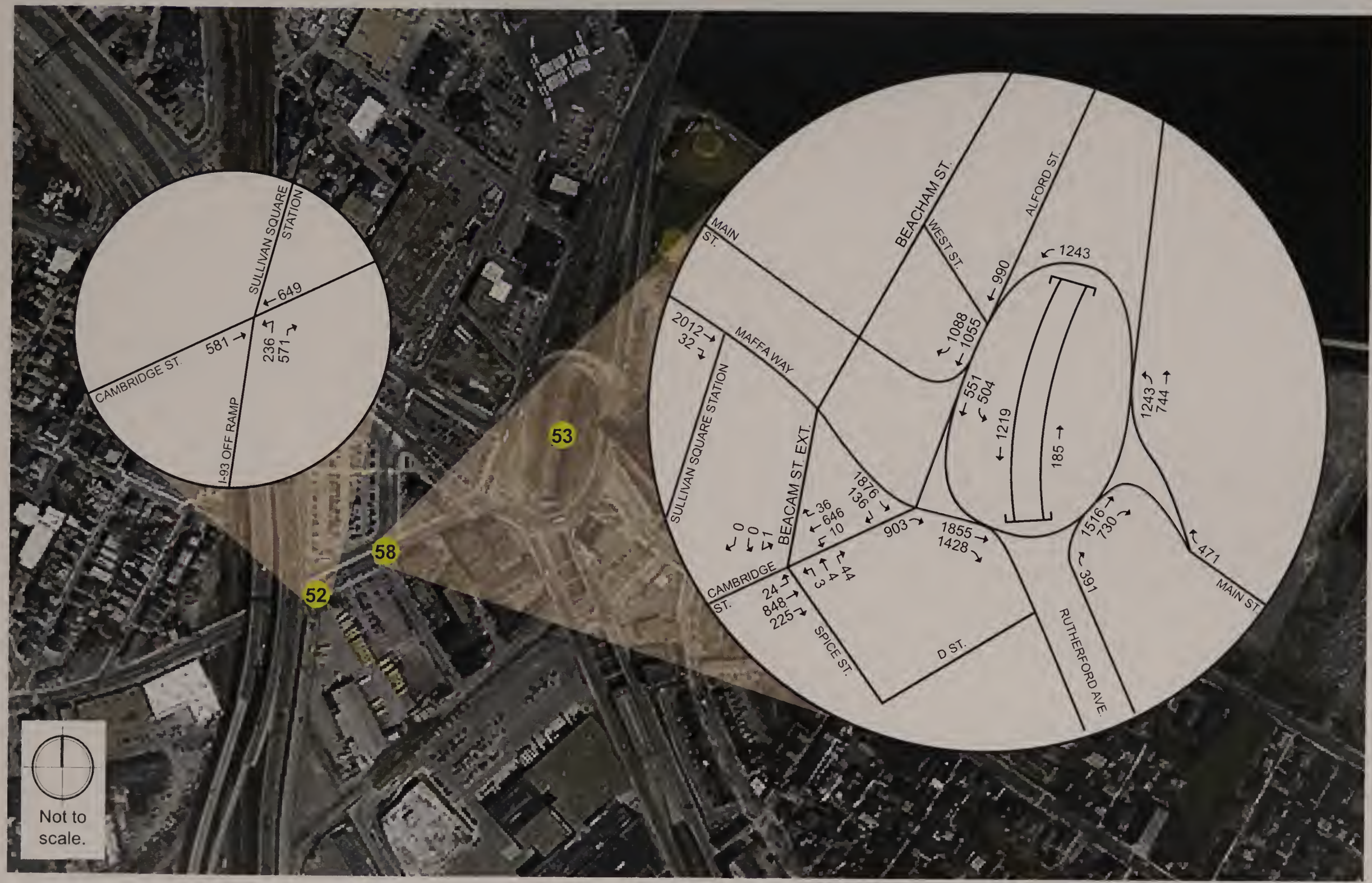

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Figure 3-12
Build (2023) Conditions Friday a.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-13
Build (2023) Conditions Friday p.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

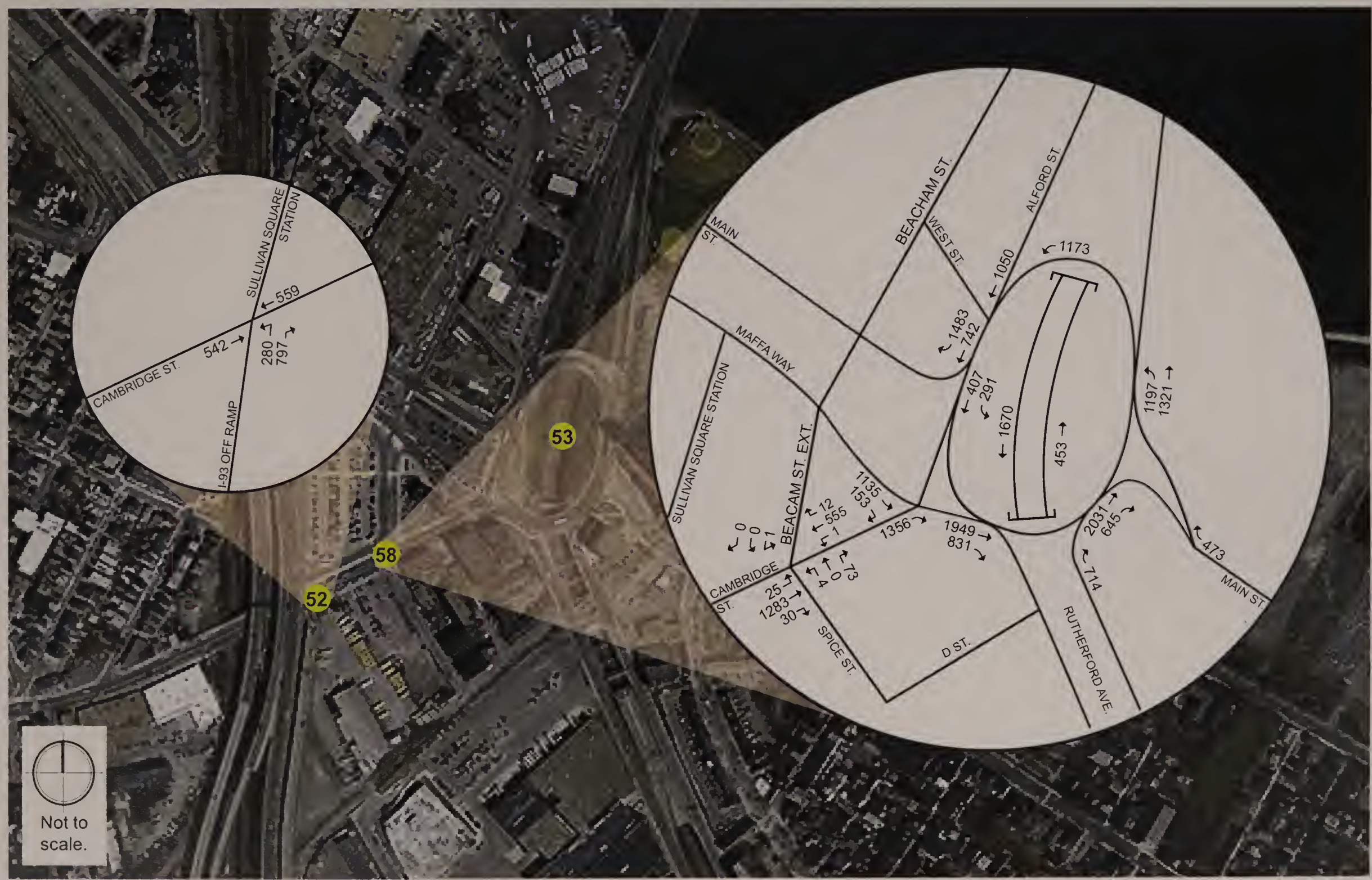

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Figure 3-14
Build (2023) Conditions Saturday Afternoon Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

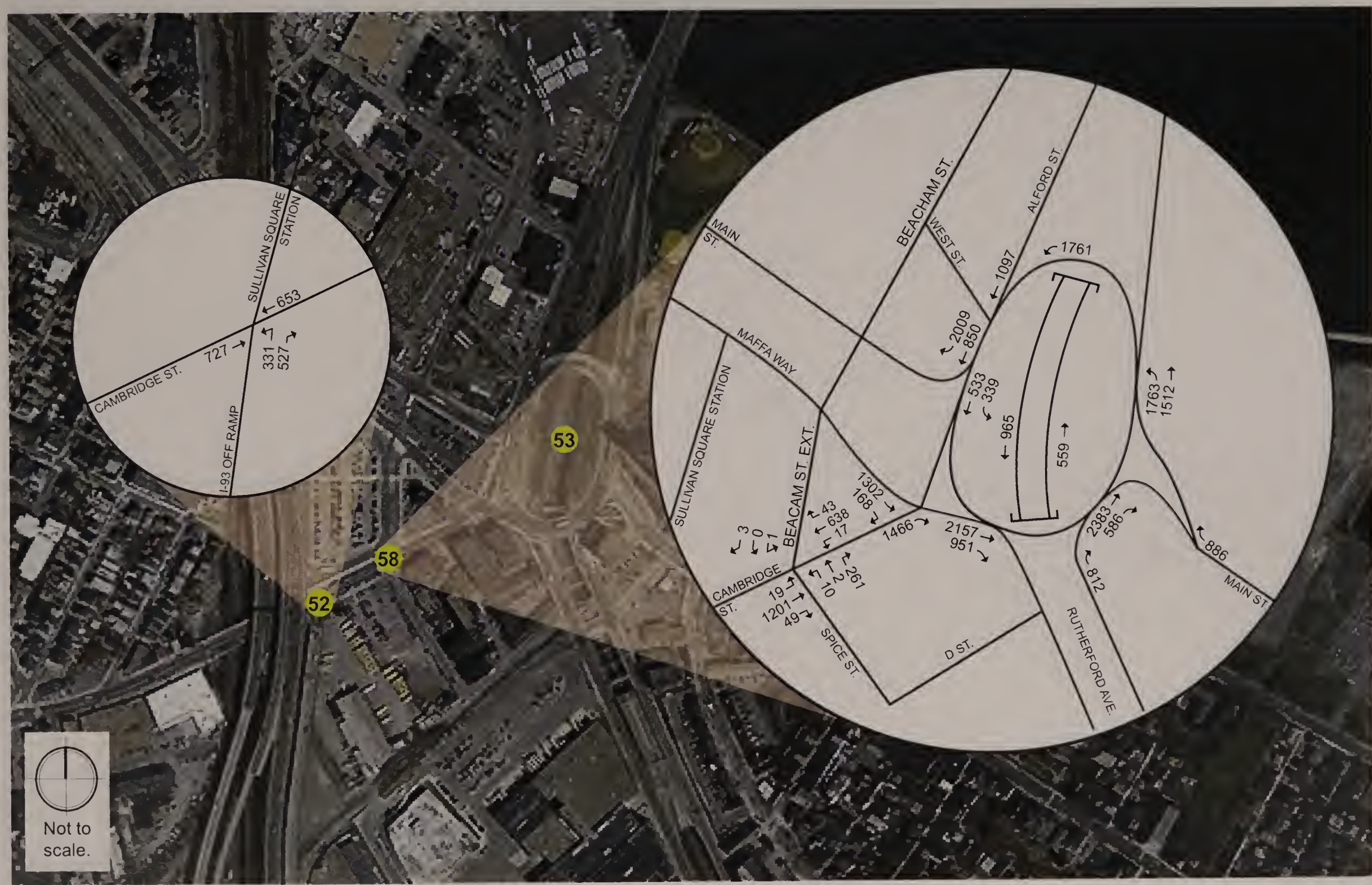

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Figure 3-15
Build (2023) Conditions Friday p.m. "Real" Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

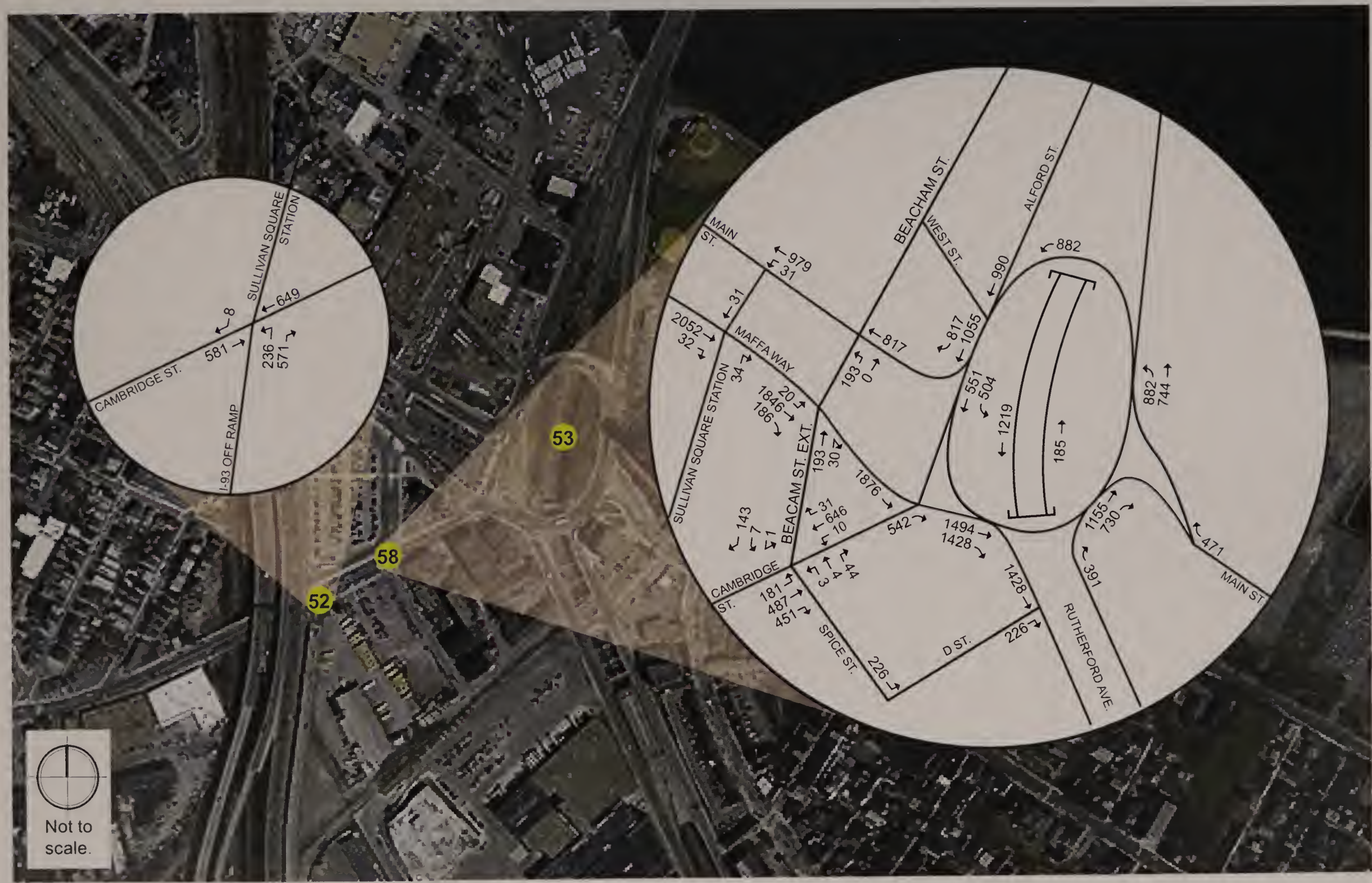

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Figure 3-16
Build Mitigated (2023) Conditions Friday a.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

Figure 3-17

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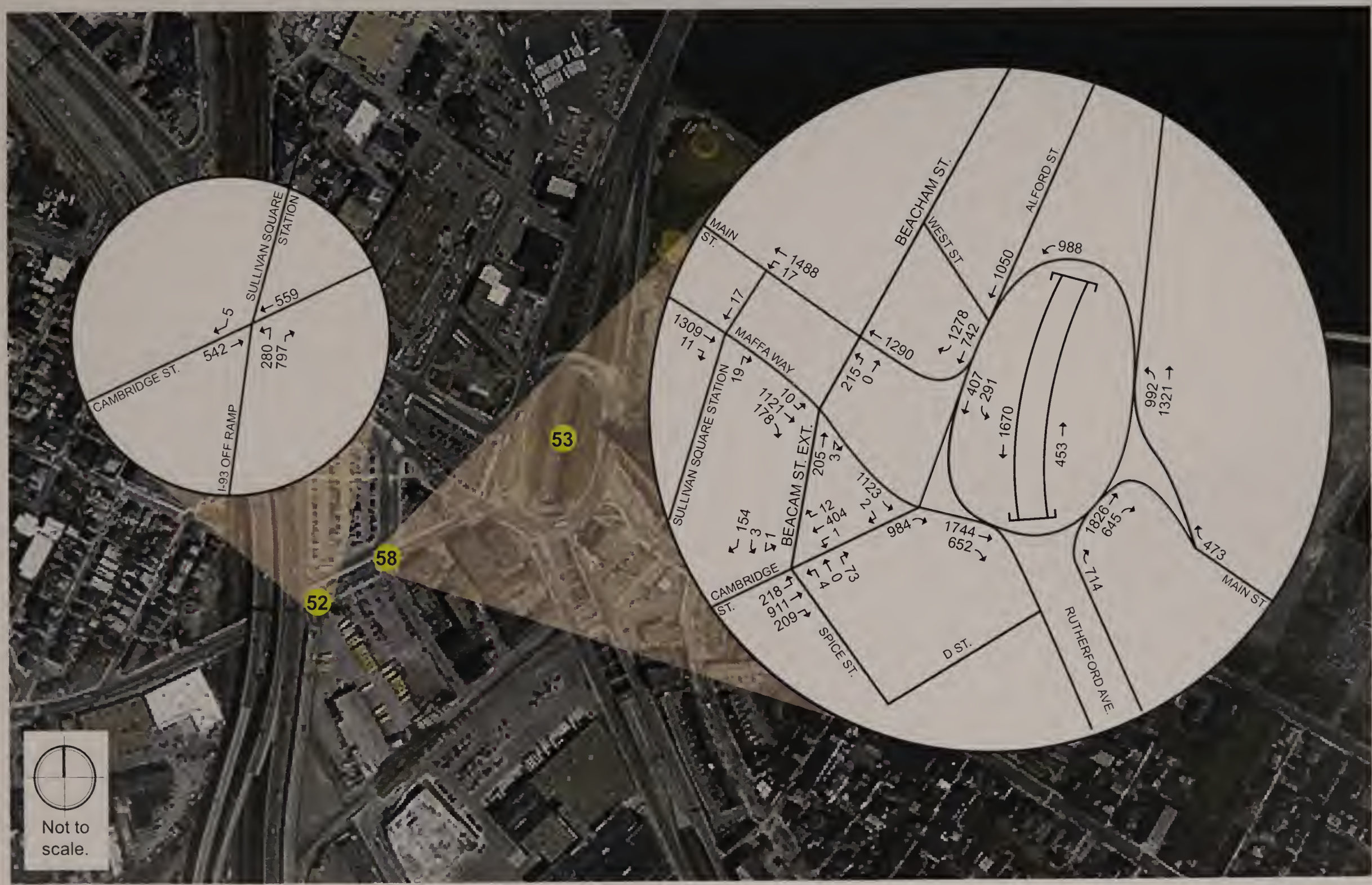
Build Mitigated (2023) Conditions Friday p.m. Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015



Wynn Resort in Everett
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Figure 3-18
Build Mitigated (2023) Conditions Saturday Afternoon Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-19
Build Mitigated (2023) Conditions Friday p.m. "Real" Peak Hour Traffic Volumes, Sullivan Square Area, Boston
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-20
Existing (2013) Friday p.m. Peak Hour (4:30-5:30 p.m.) Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-21
Existing (2013) Saturday Afternoon Peak Hour (2:45-3:45 p.m.) Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-22
No Build (2023) Friday p.m. Peak Hour Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-23
No Build (2023) Saturday Afternoon Peak Hour Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-24
Friday p.m. Peak Hour Project-generated Trips, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-25
Saturday Afternoon Peak Hour Project-generated Trips, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-26
Friday p.m. "Real" Peak Hour Project-generated Trips, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-27
Build (2023) Friday p.m. Peak Hour Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Figure 3-28
Build (2023) Saturday Afternoon Peak Hour Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

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Everett, Massachusetts

Figure 3-29
Build (2023) Friday p.m. "Real" Peak Hour Traffic Volumes, Two Locations, Route 16, Medford
Source: Howard/Stein-Hudson Associates, Inc., 2015

Chapter 4

MITIGATION MEASURES AND SECTION 61 FINDINGS

CHAPTER 4: MITIGATION MEASURES AND SECTION 61 FINDINGS

4.1 SUMMARY OF MITIGATION AND ENHANCEMENT MEASURES

As required by the Secretary's Certificate, this chapter presents the revised mitigation commitments for the Project, including draft Section 61 findings for each state agency that will issue permits for the Project. The sections below summarize the mitigation and enhancement measures associated with permits required from, or actions by, each state agency in text and tabular form. Draft Section 61 findings for those state agencies are provided in Section 4.3 below.

In addition to the substantial mitigation and enhancement measures associated with state permits or actions, the Project also includes substantial benefits for the Project's host, surrounding, and neighboring communities as described in Section 4.2.1.

4.2 OVERVIEW OF MITIGATION PROPOSED FOR THE PROJECT

The Project includes mitigation measures to enhance wetlands and waterways resources, reduce greenhouse gas emissions, water use, waste water, stormwater impacts and construction period impacts, and the remediation of contaminated soils itemized in Table 4-1: Summary Table of All Proposed Project Mitigation Measures by Wynn MA, LLC, included in the Massachusetts Gaming Commission Draft Section 61 Finding in Section 4.3.1.

4.2.1 PUBLIC BENEFITS TO HOST, SURROUNDING AND NEIGHBORING COMMUNITIES

4.2.1.1 PUBLIC BENEFITS TO THE HOST COMMUNITY

As outlined in the Host Community Agreement, the Project will provide tens of millions of dollars in short term and long term revenues, construction as well as permanent jobs, and public realm improvements to the City of Everett and the region.

Community Enhancement Fee

The Proponent will, during the construction phase of the Project, provide the City of Everett with payments totaling Thirty Million Dollars ($30,000,000) to be used for capital improvements projects identified by the City of Everett.

New Real and Personal Property Tax Revenue

The Proponent will, after opening, provide the City of Everett with annual payments in lieu of real estate taxes starting at Twenty Million Dollars ($20,000,000), which will increase by two and one-half percent (2.5%) annually.

Community Impact Fee

The Proponent will, after opening, provide the City of Everett with annual community impact payments starting at Five Million Dollars ($5,000,000), which will increase by two and one-half percent (2.5%) annually.

Everett Citizens Foundation

The Proponent will, after commencing construction, fund an Everett Citizens Foundation with annual payments starting at Two Hundred Fifty Thousand Dollars ($250,000), which will increase by two and one-half percent (2.5%) annually. The Everett Citizens Foundation will support and promote local groups, associations and programs with important city initiatives for the benefit of the City of Everett's residents.

Single Phase Construction

The Proponent will construct the Project and open in a single phase ensuring that the City of Everett and the Commonwealth will benefit as soon as possible from the completion of the Project, and eliminating any risk that committed improvements are delayed.

Tax Revenues

The Project will generate significant new tax revenue at the state and local levels in the form of sales taxes, hotel taxes, food and beverage taxes, as well as the taxes on gross gaming revenues.

New Jobs

The Project will provide approximately 4,000 construction jobs and approximately 4,000 permanent resort jobs, the latter of which will encompass job categories such as hotel/resort personnel, facility employees, food and beverage employees, gaming employees, and management, and will include full job training, benefits and opportunities for career advancement. In accordance with the Host Community Agreement, and to the extent permitted by law, the

Proponent will give reasonable preference to properly qualified residents from the City of Everett.

Support for Local Businesses

The Proponent will make a good faith effort to use local contractors and suppliers for both construction and future operations, including actively soliciting bids from vendors based in the City of Everett and in coordination with the Everett Chamber of Commerce. In accordance with the terms of the Host Community Agreement, the Proponent will also purchase and issue at least fifty thousand dollars ($50,000) in vouchers and gift certificates annually from businesses in the City of Everett. The Proponent also intends to partner with the City of Everett and hotels, restaurants, entertainment venues and tourism organizations in the region to attract visitors and boost the local economy. The Proponent has also agreed to use good faith efforts to purchase at least ten million ($10 million) per year of goods and services from vendors with a principal place of business in the City of Everett.

Roadway Improvements

The Project will provide significant transportation infrastructure improvements to the surrounding roadway network that will improve existing conditions and accommodate Project-generated trips. Proposed infrastructure improvements are identified in Section 4.3.2 of this chapter.

Public and Alternative Mode Transportation Enhancements

The Project will utilize and enhance public transportation and alternative non-vehicular transportation resources in the area. The Project will provide enhancements including fixed-route shuttle bus service, new MBTA bus stops, a new water shuttle service, and bicycle and pedestrian amenities.

Environmental Remediation

Historic use of the Project Site as a chemical manufacturing plant has resulted in significant environmental contamination that has impeded redevelopment, leaving this large waterfront parcel, which is critical to the City of Everett's development plans, blighted and vacant. Remediation activities conducted in accordance with the MCP, at an estimated cost of $22 to $31 million, will make the Project Site safe for beneficial reuse as a casino, retail, and public waterfront facility.

Open Space, Waterfront Access, and Shoreline Enhancement

The Project will also revitalize the previously inaccessible and blighted Lower Broadway waterfront for public access, use and enjoyment. Planned improvements include significant open space and public amenities along the water's edge, extending the existing waterfront trail, and creating pedestrian and bicycle connections between the DCR Gateway Park and the Lower Broadway District of the City of Everett. A restored coastal bank and salt marsh will be part of the Project.

City of Everett Infrastructure Improvements

The Proponent has agreed to upgrade as necessary the streetscape, natural gas, water and sewer infrastructure, and other infrastructure as needed.

Water Quality Improvements

The Project will implement a comprehensive stormwater management plan which will lead to enhanced water quality in the City of Everett and the Mystic River.

Support for Local Arts

The Project will support the arts and local artists by periodically hosting or providing space for community shows, exhibits, concerts, and other local cultural and arts programs. Programming will be designed to be used and enjoyed by residents of the City of Everett, including in the Project's new waterfront gathering spaces.

4.2.1.2 PUBLIC BENEFITS TO SURROUNDING AND NEIGHBORING COMMUNITIES

In accordance with the terms of the Gaming Act, the Proponent entered into surrounding community agreements with the City of Malden on November 12, 2013, the City of Medford on April 11, 2014, the City of Cambridge on April 22, 2014, and the City of Somerville on June 12, 2014. The Proponent also entered into Neighboring Community Agreements with the City of Lynn and the City of Melrose on January 28, 2014. The Chelsea Surrounding Community Agreement was established by arbitrator's award on June 9, 2014. The Proponent designated the City of Boston as a "Surrounding Community," however the City of Boston declined to participate in the arbitration process established pursuant to the terms of the Gaming Act, thereby relinquishing its

designation. As a result, the Proponent agreed to certain specified conditions in the Gaming License for the purpose of mitigating any adverse impacts to the City of Boston and, in particular, the Charlestown neighborhood.

The host, surrounding and neighboring agreements may be found at http://massgaming.com/about/host-surrounding-communities/surrounding-community-agreements/. A summary of mitigation measures included in the surrounding and neighboring communities follows.

Malden Surrounding Community Agreement

The Malden Surrounding Community Agreement recognizes the City of Malden's role as a transportation hub for the Project and commits to mitigation in the form of funding to support transitional road improvements, subsidies for public safety (such as increased police, fire, traffic and public works personnel to maintain roadway safety) related to its role as a transportation hub, efforts to mitigate any adverse business impacts (such as agreements regarding good faith efforts to use local contractors, and a voucher/gift certificate program for the Proponent's employees to incentivize patronage of Malden businesses), a job preference for residents of the City of Malden, a community fund to support nonprofit organizations, and funding for up to twenty-five percent (25%) of a concept design study for Wellington Circle. The Proponent has also agreed to use good faith efforts to purchase at least ten million dollars ($10 million) per year of goods and services from vendors with a principal place of business in the City of Malden.

On November 20, 2014, the Proponent made its initial payment to the City of Malden in the amount of one million dollars ($1,000,000), and will make annual recurring payments, following the opening of the Project, to the City of Malden in the amount of one million dollars ($1,000,000), which will increase by two and one-half percent (2.5%) annually with a further adjustment on the fifth (5th) annual payment.

Medford Surrounding Community Agreement

As with Malden, the Medford Surrounding Community Agreement recognizes Medford's role as a transportation hub for the Project and commits mitigation in the form of funding to support transitional road improvements, subsidies for public safety (such as increased police, fire, traffic and public works personnel to maintain roadway safety), efforts to mitigate any adverse business impacts (such as agreements regarding

good faith efforts to use local contractors and a voucher/gift certificate program for Wynn employees to incentivize patronage of Medford businesses), funding to support water transportation, a job preference for Medford residents, approximately one million dollars ($1,000,000) for transportation improvements in accordance with the MEPA process, and funding for up to twenty-five percent of a concept design study for Wellington Circle (up to one million five hundred thousand dollars ($1,500,000). The Proponent has also agreed to use good faith efforts to purchase at least $10 million per year of goods and services from vendors with a principal place of business in the City of Medford.

The Proponent made its initial payment to the City of Medford in the amount of two hundred fifty thousand ($250,000) dedicated to the Krystle Campbell Peace Garden and Memorial Park, and will make annual recurring payments, following the opening of the Project, to the City of Medford in the amount of one million dollars ($1,000,000), which will increase by five percent (5.0%) after the payment of the first fifteen payments.

Cambridge Surrounding Community Agreement

The Cambridge Surrounding Community Agreement includes mitigation in the form of efforts to mitigate any adverse business impacts (such as agreements regarding good faith efforts to use local contractors and a voucher/gift certificate program for Wynn employees to incentivize patronage of City of Cambridge businesses), funding to support water transportation, a job preference for Cambridge residents, and mitigation to address transportation impacts.

The Proponent made its initial payment to the City of Cambridge in the amount of two hundred thousand ($200,000) to enable the City of Cambridge to study and/or make certain improvements to the Land Boulevard/O'Brien Highway intersection, and will make annual recurring payments, following the opening of the Project, to the City of Cambridge in the amount of one hundred thousand dollars ($100,000).

Somerville Surrounding Community Agreement

The Somerville Surrounding Community Agreement includes mitigation in the form of funding to support road improvements, subsidies for public safety (such as increased police, fire, traffic and public works personnel to maintain roadway safety), efforts to mitigate any adverse business impacts (such as agreements regarding good faith efforts to use local contractors and a voucher/gift certificate program for the

Proponent's employees to incentivize patronage of Somerville businesses), funding to support water transportation, a job preference for residents of Somerville, a community fund to support nonprofit organizations, improvements to Wellington Circle and Sullivan Square in accordance with the MEPA process, and funding for up to twenty-five percent of a concept design study for Wellington Circle. The Proponent has also agreed to use good faith efforts to purchase at least $10 million per year of goods and services from vendors with a principal place of business in the City of Somerville.

The Proponent made its initial payment to the City of Somerville in the amount of one hundred and fifty thousand dollars ($150,000) for the purpose of reimbursing Somerville for expenses incurred by the City of Somerville for legal, financial and other professional services related to evaluating the impact of the Project, and will make annual recurring payments, following the opening of the Project, to the City of Somerville in the amount of six hundred and fifty thousand dollars ($650,000), which will increase by five percent (5.0%) after the payment of the first fifteen payments.

Chelsea Surrounding Community Agreement

The Chelsea Surrounding Community Agreement includes mitigation in the form of funding to support road improvements, subsidies for public safety (such as increased police, fire, traffic and public works personnel to maintain roadway safety), efforts to mitigate any adverse business impacts (such as agreements regarding good faith efforts to use local contractors and a voucher/gift certificate program for Wynn employees to incentivize patronage of City of Chelsea businesses), a job preference for residents of the City of Chelsea, a community fund to support non-profit organizations, and approximately two hundred seventy five thousand dollars ($275,000) for transportation improvements in accordance with the MEPA process. The Proponent has also agreed to use good faith efforts to purchase at least two million five hundred thousand dollars ($2.5 million) per year of goods and services from vendors with a principal place of business in the City of Chelsea.

The Proponent made its initial payment to the City of Chelsea in the amount of three hundred thousand dollars ($300,000) for the purpose of enabling the City of Chelsea to make certain roadway improvements on all transitional roads in preparation for the Project, and will make annual recurring payments, following the opening of the Project, to the City of Chelsea in the amount of six hundred and fifty thousand ($650,000),

which will increase by five percent (5.0%) after the payment of the first fifteen payments.

Lynn Neighboring Community Agreement

The Lynn Neighboring Community Agreement recognizes that the City of Lynn is unlikely to experience significant adverse impacts associated with the Project but provides that the parties will meet in a good faith effort to address any impacts that arise. The agreement provides for the inclusion of the City of Lynn in the Proponent's proprietary concierge program for the purpose of cross-marketing the City of Lynn's cultural, historical and entertainment attractions, participation in the Proponent's WE Save program to provide opportunities for local businesses to market themselves to the Proponent's 4,000 employees, business development opportunities for local businesses, a jobs program, and a community fund to support nonprofit organizations.

Melrose Neighboring Community Agreement

The Melrose Neighboring Community Agreement recognizes that the City of Melrose is unlikely to experience significant adverse impacts associated with the Project but provides that the parties will meet in a good faith effort to address any impacts that arise. The agreement provides for the inclusion of the City of Melrose in the Proponent's proprietary concierge program for the purpose of cross-marketing the City of Melrose's cultural, historical and entertainment attractions, participation in Proponent's WE Save program to provide opportunities for local businesses to market themselves to Proponent's 4,000 employees, business development opportunities for local businesses, a jobs program, and a community fund to support nonprofit organizations

Gaming License Conditions for the City of Boston

Mitigation Payments:

The Proponent designated the City of Boston as a "Surrounding Community," however the City of Boston declined to participate in the arbitration process established pursuant to the terms of the Gaming Act thereby relinquishing its designation. As a result, the Proponent agreed to certain specified conditions in the Gaming License for the purpose of mitigating any adverse impacts to the City of Boston and, in particular, the Charlestown neighborhood. The conditions set forth in the Gaming License include a one-time, pre-opening payment by the Proponent of one million dollars ($1,000,000). Per the Gaming License, this payment

can be used to support Charlestown's non-profits organizations, parks, after-school activities, senior programs, job training programs, cultural events and related activities that promote Charlestown's heritage, quality of life, recreational and cultural activities. On January 6, 2015, the Proponent delivered this initial payment to the MGC following the City of Boston's refusal to accept the payment. The MGC continues to hold this payment in escrow for the City of Boston's benefit.

Following the opening of the Project, the Proponent has agreed to annual payments to the City of Boston in the amount of one million six hundred dollars ($1,600,000), adjusted annually to reflect increases in the Consumer Price Index. The annual payments are to be used for "Other Mitigation" including; (i) staffing and other public safety initiatives related to increased pedestrian and vehicular traffic in the Boston related to the Project; (ii) improvements to facilities within Boston to facilitate water transportation and to fund staffing and other public safety initiatives related to increased use of water transportation in the Boston Harbor related to the Project in Everett; (iii) support of Charlestown's non-profits organizations, parks, after-school activities, senior programs, job training programs, cultural events and related activities that promote Charlestown's heritage, quality of life, recreational and cultural activities including, without limitation, the Charlestown Little League and Charlestown Youth Hockey programs; and (iv) any other impacts including any transportation infrastructure impacts.

In addition, the Proponent has agreed to reimburse the City of Boston for actual, documented reasonable out-of-pocket expenses, not to exceed seven hundred and fifty thousand ($750,000), incurred by the City of Boston for legal, financial and other professional services to determine the impact of the Project.

In addition to the improvements to Sullivan Square and Rutherford Avenue detailed in Chapter 3, Transportation, the Proponent has agreed to make a payment of twenty-five million dollars ($25 million) for the long-term solution to alleviate traffic congestion in Sullivan Square and the roads leading into and/or connected to Sullivan Square. This payment will be made in equal installments over a ten year period following the opening of the Project. Finally, the Proponent has agreed to an annual payment of twenty thousand dollars ($20,000) per additional vehicle trip entering and leaving the Project using Sullivan Square during the Friday afternoon peak hour in excess of the number of vehicle trips entering and leaving the Project using Sullivan Square

during the Friday afternoon peak hour shown in the data used by the City of Boston as the basis for its issuance of any required permits necessary for the Proponent's Sullivan Square mitigation plan. This payment would be an annual payment for the first ten years following the opening of the Project, and is capped at twenty million dollars ($20 million).

Business Development:

Pursuant to the Gaming License, the Proponent has also agreed to cooperate with the City of Boston's Chamber of Commerce to include Boston businesses in the Proponent's proprietary concierge program for the purpose of cross-marketing and promoting City of Boston local businesses and other attractions. The Proponent will also work with and assist local businesses in the City of Boston to become "Wynn certified" in order to participate in this local purchasing program. The Proponent has also agreed to use good faith efforts to purchase at least fifteen million dollars ($15 million) per year of goods and services from vendors with a principal place of business in the City of Boston.

Jobs Program:

Subject to its obligations to the City of Everett and other surrounding communities and other legal requirements, the Proponent has agreed to provide preferential treatment to qualified City of Boston residents and, in particular, residents of Charlestown, for contracting, subcontracting and servicing opportunities in the development and construction of the Project, including by advertising and holding an employment informational event at least one event every six months prior to opening for City of Boston residents at a venue in Charlestown. Prior to beginning the process of hiring employees (other than internally) for operations, the Proponent has agreed to advertise and hold at least one employment informational event for City of Boston residents at a venue located in Charlestown, and shall hold one event annually thereafter. In addition, the Proponent has agreed to work with non-profit organizations to develop a job readiness training program that will be available to all residents of the City of Boston.

4.3 DRAFT SECTION 61 FINDINGS

Massachusetts General Laws Chapter 30, Section 61 requires state agencies and authorities, when approving, providing land or funding for, or undertaking a project, to evaluate and determine whether the project causes any damage to the environment, and to make a

written finding describing that determination and confirming that all feasible measures have been taken to avoid, minimize and mitigate any damage to the environment. Under the MEPA regulations, an agency's Section 61 findings are directed to those aspects of the project that are within the subject matter scope of the agency's respective permit or within the geographic area subject to a land transfer.

State agencies expected to make Section 61 findings for the Project prior to issuing approvals for implementing the Project include MGC, MassDEP, MassDOT, DCR, and Massachusetts Water Resources Authority ("MWRA"). This SSFEIR addresses and provides updated draft Section 61 Findings for those state agencies.

The following draft Section 61 findings reflect the mitigation measures related to each of the following agencies' jurisdictions as they may be implemented. All such mitigation shall be subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

4.3.1 DRAFT MASSACHUSETTS GAMING COMMISSION SECTION 61 FINDINGS

Introduction

These Section 61 Findings for the Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Gaming Commission ("MGC"). The following approvals will be required from MGC:

- Category 1 Gaming License

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site"). Extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts Department of Conservation and Recreation ("DCR") Gateway Park. The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the "Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th, 2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Specific Mitigation Measures

The Category 1 License awarded by the MGC to Wynn MA, LLC on November 7, 2014 is expressly conditioned on the Project's compliance with MEPA and with any conditions required in the FEIR, SFEIR, or any Secretary's certificate thereon. The MGC Commission finds, based upon its review of the MEPA documents that the terms and conditions of these Section 61 Findings constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to MGC's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the license and Table 4-1: Summary of Proposed Project Mitigation Measures by Wynn MA, LLC.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such improvements prior to opening. Notwithstanding, the foregoing commitment is subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

Table 4-1: Summary of All Proposed Project Mitigation Measures by Wynn MA, LLC

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Off-site Transportation Improvements – Everett:			
1. Revere Beach Parkway (Route 16)/Mystic View Road/Santilli Highway/Route 99 Connector Improvements (Santilli Circle)	– Modify the approach from Frontage Road into the rotary to allow for two formal lanes. – Widen circle at Santilli Highway approach to allow for three travel lanes. – Provide improved pedestrian and bicycle connection from Frontage Road to Mystic View Road. – Reconfigure channelizing island on south side of rotary near Mystic View Road. – Provide traffic signal improvements at the signalized locations around the traffic circle. – Provide landscaping improvements to the center of the circle. – Provide new guide signage and pavement markings. – Perform RSA during 25% design. – Incorporate RSA recommendations into final design, where feasible. – Coordinate with MassDOT to identify funding source for implementation of RSA recommendations.	$4.1 million	Prior to opening
2. Revere Beach Parkway (Route 16)/ Broadway/Main Street (Sweetser Circle)	– Reconstruct circle and approaches to function as a two-lane modern roundabout. – Reconfigure the existing Broadway (Route 99) northbound approach to allow for three travel lanes providing free flow access to Route 16 eastbound. – Provide shared use path on northwest side of rotary to improve bicycle access. – Install new signage to provide direction to bicyclists on how to navigate the rotary safely.	$2 million	Prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	– Provide landscaping and improvements on the north side of the circle. – Maintain pedestrian signal across Route 16 eastbound exit from rotary.		
3. Broadway/Beacham Street 4. Broadway/Horizon Way 5. Broadway/Lynde Street 6. Broadway/ Thorndike Street 7. Bow Street/Mystic Street 8. Bow Street/Lynde Street 9. Bow Street/ Thorndike Street 10. Beacham Street/Robin Street 11. Broadway/ Bowdoin Street	– Reconstruct Lower Broadway as a four-lane boulevard with turn lanes at major intersections. – Upgrade/replace/install traffic control signals. – Reconstruct sidewalks and bicycle lanes where required. – Install street trees and lighting. – Improve MBTA bus stops along Lower Broadway. – Installation of technology along Broadway/Alford Street (Route 99), near project entrance, to allow for signal prioritization for buses.	$4 million	Prior to opening
12. Broadway/ Norwood Street/Chelsea Street	– Optimize traffic signal timing, phasing and coordination.	$75,000	Prior to opening
13. Lower Broadway Truck Route	– Upgrade Robin Street and Dexter Street to serve as a truck route. – Provide full depth reconstruction of the existing roadway to accommodate heavy vehicles. – Includes reconstruction of Robin Street and Dexter Street to include heavy-duty pavement, corner radii, improvements, sidewalk reconstruction (where present), drainage system modifications (minor), signs and pavement markings.	$4.3 million	Prior to opening
14. Ferry Street/ Broadway (Route 99)	– Traffic signal retiming and optimization.	$20,000	Prior to opening
Everett Total: $14,495,000			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Off-site Transportation Improvements – Medford:			
1. Mystic Valley Parkway (Route 16)/Fellsway (Route 28)/Middlesex Avenue (Wellington Circle)	– Upgrade/replace traffic signal equipment/signs/pavement markings. – Optimize traffic signal timing, phasing and coordination. – Widen Route 28 northbound to provide an additional left turn lane. – Widen Route 16 westbound to provide an additional through lane in the middle of the intersection. – Reconstruct non-compliant sidewalks and accessible ramps around the intersection to improve pedestrian access. – Provide landscape improvements.	$4.0 million	Prior to opening
2. Mystic Valley Parkway (Route 16)/Route 16 Connector 3. Mystic Valley Parkway (Route 16)/Mystic Avenue	– Traffic signal retiming and optimization. – ADA Improvements.	$500,000	Prior to opening
4. Road Safety Audit	– Perform Road Safety Audit at the intersection of Mystic Valley Parkway (Route 16)/Route 16 Connector.	$15,000	Prior to opening
5. Wellington Circle Study	– Funding for study of long-term alternatives for reconstruction of Wellington Circle.	up to $1.5 million	Prior to opening
Medford Total, Up To: $6,015,000			
Off-site Transportation Improvements – Boston:			
1. Alford Street/Main Street/Sever Street/ Cambridge Street (Sullivan Square) 2. Cambridge Street/ I-93 northbound off-ramp	– Optimize signal timing for Maffa Way/ Cambridge Street; interconnect and coordinate traffic signals, widen the Main Street approach to provide two lanes. – Reconstruct busway between Cambridge Street and Maffa Way.	$10.0 million	Prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	– Reconstruct the southbound approach of Alford Street at Cambridge Street. – Install new traffic signals at Cambridge Street/Spice Street/MBTA Busway and Maffa Way/Busway. Upgrade/replace traffic signal equipment/signs/ pavement markings. – Optimize traffic signal timing, phasing, and coordination. – Reconstruct Spice Street and D Street. – Reconstruct sidewalks on west side of rotary between Sullivan Square station and Alford Street Bridge. – Reconstruct sidewalks and upgrade lighting and streetscape in rotary between Cambridge Street and Main Street (east). – Provide bicycle lanes on Cambridge Street. – Reconstruct MBTA lower busway and parking area at Sullivan Square station, including new traffic signal at Maffa Way/station entrance. – Construct BUS ONLY left-turn lane from Main Street into Sullivan Square Station.		
3. Traffic Signal Interconnect Conduit from Sullivan Square to Austin Street	– Install conduit, pullboxes, and wiring.	$525,000	Prior to opening
4. Dexter Street/Alford Street (Route 99)	– Upgrade/replace traffic signal equipment/signs/ pavement markings. – Optimize traffic signal timing, phasing, and coordination.	Included in cost of Lower Broadway (Route 99) Improvements	Prior to opening
5. Rutherford Avenue (Route 99)/Route 1 Ramps	– Optimize traffic signal timing and phasing.	$20,000	Prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
6. Sullivan Square Landscaping	– Improve landscaping within the rotary at Sullivan Square and immediately north of the rotary adjacent to Rutherford Avenue.	$350,000	Prior to opening
7. Long-term Commitment to Sullivan Square	– Provide payments of $2.5 million per year into the Sullivan Square mitigation fund.	$2.5 million per year for 10 years for a total of $25 million	Annually
8. Long-term Commitment – Sullivan Square	– Provide payments to the City of Boston for each vehicle above Friday afternoon peak hour projections.	$20,000 per additional vehicle trip, not to exceed $2,000,000 per year for a total of $20,000,000 over 10 years	Monitor and Report no later than 30 days after the first anniversary of Project opening and for 10 years thereafter.
Boston Total Up To: $35,895,000 - $55,895,000			
Off-site Transportation Improvements – Revere:			
1. Route 16/Route 1A/Route 60 (Bell Circle)	– Upgrade/replace traffic signal equipment/signs/pavement markings – Optimize traffic signal timing, phasing and coordination	$550,000	Prior to opening
Revere Total: $550,000			
Off-site Transportation Improvements – Chelsea:			
1. Route 16/Washington Avenue	– Upgrade/replace traffic signal equipment/signs/pavement markings – Optimize traffic signal timing, phasing and coordination	$275,000	Prior to opening
2. Route 16/Everett Avenue 3. Route 16/Webster Avenue	– Optimize traffic signal timing, phasing and coordination	$30,000	Prior to opening
Chelsea total: $305,000			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Transportation Demand Management			
Transportation Demand Management	- Membership Fee with a Transportation Management Association	$10,000/year	At opening and ongoing
	- Employ a designated Transportation Coordinator for the Project to coordinate efforts, monitor success rates, and manage strategic implementation of traffic reduction programs. - Schedule employee shift beginnings and endings outside specified peak traffic periods. - Carpool/vanpool matching programs. - Dissemination of promotional materials, including newsletters about TDM program in print at the Project's on-site Transportation Resource Center, and online.	$50,000/year	At opening and ongoing
	- Patron Orange Line Shuttle Service to Wellington and Malden Center stations. - 2 Locations, 20 Minute Headways, 20 Hrs./day, 30-50 passenger vehicles.	Up to $3,285,000/ year operating costs	At opening and ongoing
	- Employee Shuttle Buses - 2 Locations, 20 Minute Average Headways, 24 Hrs./day.	Up to $2,400,000/ year operating costs	At opening and ongoing
	- Premium Park & Ride Shuttle Buses - 3 Locations, 90 Minute Headways, 12 Hrs./day.	Up to $1,934,500/ year operating costs	At opening and ongoing
	- Neighborhood Shuttle Buses. - Continuous Loop, 20 Minute Headways, 24 Hrs./day.	Up to $1,100,000/ year operating costs	At opening and ongoing
	- Water shuttle service to the Project Site.	Up to $3,303,000/ year operating costs	At opening and ongoing

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	- On-site Full Service MBTA Fare Vending Machine.	$35,000	Prior to opening
	- Participation in the MBTA Corporate Pass Program to the extent practical and as allowable pursuant to commercial tenant lease requirements.	Up to $400,000	At opening and ongoing
	- Electric vehicle charging stations within the proposed parking garage. Annual operating cost of $166,500.	Installation cost in Project Construction Costs, $166,500/year operating cost	At opening and ongoing
	- Car sharing services in the garage at the Project Site.	Included in Project Construction Costs	At opening and ongoing
	- Preferential parking for car/vanpools and alternatively fueled vehicles.	Included in Project Construction Costs	At opening and ongoing
	- Offering a "Guaranteed-Ride-Home" in case of emergency to employees that commute to the Project by means other than private automobile.	$10,000/ year	At opening and ongoing
	- Orange Line annual operating subsidy.	$410,188	At opening and ongoing
Transportation Demand Total Up To: $35,000 one-Time Costs			
Transportation Demand Total Up To $13,069,188 Annual Operating Costs			
MBTA Facility Improvements			
1. Wellington Station Improvements	- Improvements to MBTA's Wellington Station to accommodate Wynn patron shuttle service at curbside.	$550,000	Prior to opening
2. Malden Station Improvements	- Improvements to MBTA's Malden Center Station to accommodate Wynn patron shuttle service at curbside.	$25,000	Prior to opening
3. MBTA Everett Shops improvement	- Improvements to access and loading docks at MBTA's Everett shops.	$1,500,000	Prior to opening
MBTA Facility Improvements Total: $2,075,000			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Water Transportation Vessels	The Proponent will provide dock facilities and customized ferry vessels to support passenger water transportation service between the Project Site and key Boston Harbor landing sites.	Up to $8,600,000	At opening
Water Transportation Total Up To: $8,600,000			
Annual Monitoring and Reporting Program	- Post-development traffic and parking monitoring and employee survey program in order to evaluate the adequacy of transportation mitigation measures, including the TDM program.	$30,000	At opening and ongoing
Sullivan Square traffic monitoring	- Post-development motor vehicle traffic counts in Sullivan Square as well as additional locations to determine whether Project-related vehicle trips through Sullivan Square have exceeded projections during the Friday afternoon peak hour.	$20,000/year for 10 years, if conditions are met	No later than 30 days after the first anniversary of Project opening and annually for 10 years thereafter
Annual Monitoring and Reporting Program Total: $50,000			
Transportation Grand Total One-time Costs Up To: $67,970,000 - $87,970,000			
Transportation Grand Total Annual Operating Costs Up To: $13,119,188			
On-Site (Non-Transportation) Improvements			
Wastewater	The Project will provide funding for sewer system improvements to remove Infiltration and Inflow ("I/I") equivalent to 4 gallons removed for every gallon of new wastewater generated; currently estimated at 283,489 gallons per day. Grease traps and gas/oil separators will be installed.	$10.00/gallon	During construction
Wastewater Total Estimated: $ 2,834,890			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Water Use	The Project will obtain Leadership in Energy and Environmental Design ("LEED") Certification of Gold or higher, and incorporates water conservation measures that are intended to reduce the potable water demand on the MWRA water supply system. The Project will utilize water-efficient plumbing fixtures, low-flow lavatory faucets and showerheads. Through rainwater harvesting, and the installation of alternatives to natural turf landscaping, the Project will further reduce water demand and use. The Project includes extensive indoor and outdoor landscaping. The Project will utilize timers, soil moisture indicators and rainfall sensors to reduce potable water use on landscaping.		During construction
Water Use Total included in Greenhouse Gas Emissions			
Wetlands, Waterways, and Water Quality Certification	The Project will contribute to improved water quality, clean-up and restore of bulkheads and piers, remove trash and litter along the waterfront, and restore and enhance shoreline areas along the Project Site. The Project will also create public access and amenities in currently inaccessible areas of the City of Everett's Central Waterfront. Wetlands mitigation and enhancement measures include: *On-site* - Remediation, revegetation and enhancement of 550 linear feet of existing shoreline with enhanced "living shoreline;"	$28,736,044	During construction and prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	- Removal of invasive vegetation and planting of native herbaceous and shrub vegetation along part of existing Coastal Bank and Riverfront Area; - Transformation of 10,900 +/- SF of disturbed Coastal Beach/Tidal Flats, Coastal Bank, and Riverfront Area to Salt Marsh; - Dredging to provide ample draft for water transportation, recreational vessels and a proposed floating dock; - Debris clean up within the Land Under the Ocean, Coastal Beach and Coastal Bank resource areas; - Replacement of existing bulkhead and construction of new bulkheads within areas of existing degraded Coastal Beach and Coastal Bank areas; and Substantial public benefits and water-dependent uses along the Project Site's waterfront, transforming the Site into a vibrant and active development by providing: - High quality open space along the Mystic River - 100% of the ground floor will be Facilities of Public Accommodation - A water transportation dock - A continuous harborwalk along the waterfront *Off-site* Direct bicycle and pedestrian connections to the DCR Gateway Park and to Broadway including construction of a multi-use path, benches, signage, bicycle racks, plantings and lighting		

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Public Access	Funding to DCR for planning and engineering services related to an investigation of a potential pedestrian bridge crossing of the Mystic River linking Somerville and Everett	$250,000	Prior to opening
Wetlands, Waterways, and Water Quality Certification Total $28,736,044			
Stormwater	Implementation of a stormwater management system that will dramatically improve the quality of runoff on-site. including: *On-site* - Two new outfalls will discharge treated stormwater into the Mystic River; - Green Roof; - Best Management Practices ("BMPs") including pavement sweeping, deep sump catch basins, four (4) proprietary stormwater separators, and stormwater media filters will be constructed. These BMPs will be designed to remove at least 80 percent of the average annual load of Total Suspended Solids (TSS); and - Catch basins, silt fences, hay bales and crushed stone will be used during construction to prevent sediment from entering runoff. *Off-site* Offsite mitigation measures associated with transportation improvements will include bio-retention or subsurface infiltration chambers, deep sump catch basins or proprietary stormwater separators.	$3,056,000	Prior to Opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
On-Site Stormwater Total : $3,056,000			
	The Project buildings will be designed to be certifiable under the Green Building Council Leadership in Energy and Environmental Design (LEED) rating of Gold or higher. The Project will be operated utilizing a series of best operating practices consistent with LEED principles to maintain the energy use, water efficiency, atmospheric, materials and resources use, and indoor air quality goals. The Proponent will provide a self-certification to the MEPA Office regarding compliance with GHG reductions upon completion of construction.		
Green House Gas Emissions	The Project will commit to a comprehensive list of Energy Efficiency Measures (EEM) that are predicted to reduce stationary source CO2 emissions for the building by 18.4% relative to ASHRAE 90.1-2010, or for the entire Project Site (including buildings, garage ventilation, and lighting, exterior lighting and water/wastewater utilities) by 27.4% relative to ASHRAE 90.0-2010 standards. Proposed EE measures include: - Install street trees and lighting; - Cool roofs; - Central chiller plant with better efficiency than Code; - Demand Control Ventilation (DCV) for the casino, public entertainment, and retail areas; - Energy Recovery Ventilation (ERV) to reduce chiller energy use; - Building envelopes with	$57,000,000	During construction and post occupancy

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	roof and window insulation better than Code; - Skylights over the entry atrium and along the retail promenade (daylighting controls will be tied to this extensive system of skylights); - Lower light power density 20% better than Code; - At least 80% of total to be Low-energy Electronic Gaming Machines (EGMs); - Metal halide lighting for all parking structures; - High efficiency elevators with regenerative VVVF drives and LED lights; - Demand Control Exhaust Ventilation (DCEV) with variable frequency drive (VFD) fans for enclosed parking structures and metal halide lighting for all parking structures; - Kitchen and restaurant refrigeration energy efficiency design to reduce energy use; - Energy-STAR appliances; - Enhanced building commissioning; and - Occupancy controls for non-occupied or infrequently occupied spaces. The Project has adopted the following Renewable Energy Measures: - Photo-voltaic (PV) system on the podium building roof or other locations, and/or purchase from local service providers of Green Power of annual electric consumption equaling 10% of the Project's annual electrical consumption;		

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	- Cogeneration plant using a nominal 1-MW microturbine, providing approximately 20% of the Project's annual electrical consumption and significant amounts of absorption cooling, heat and hot water. Intersection improvements to reduce vehicle idling and Transportation Demand Management measures to reduce trips listed above will reduce Project-related motor vehicle CO_2 emissions by 13.0%. When combined, (stationary source plus transportation), the Project's total CO2 emissions reductions are 25.7% percent compared to the Base Case. The Project will also plan for and account for the effects of Sea Level Rise by elevating the proposed structures non-service and garage floor elevations to 15 to 16 feet above the 100-year flood level. The Project will also incorporate the following design criteria: - Parking garages entrances and other openings into below grade spaces will be elevated above the 100-year flood level, or will be sufficiently flood proofed to avoid damage from coastal storms, and Critical infrastructure and HVAC equipment will be elevated above projected flood levels.		
Green house Gas Emissions Total $57,000,000			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Grand Total Non-Transportation Mitigation Up To: $91,62,934			

The Commission finds that the terms and conditions incorporated into the Commission approval for this Project constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the Commission's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the license and Table 4-3: Summary of Proposed Project Mitigation Measures by Wynn MA LLC.

_____

Massachusetts Gaming Commission

_____

By

_____

[Date]

4.3.2 DRAFT MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION SECTION 61 FINDINGS

Introduction

These Section 61 Findings for Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Department of Transportation Highway Division ("MassDOT, Highway Division").

The following permits and approvals will be required from the Department:

- Vehicular Access Permit (Category III)
- Non-Vehicular Access Permit
- Traffic Signal Regulation

The following draft Section 61 findings reflect the mitigation measures related to the agency's jurisdictions as they may be implemented, subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site"). Extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts Department of Conservation and Recreation ("DCR") Gateway Park. The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the

"Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th, 2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Project Impact Evaluation

The proposed Project will result in the generation of new vehicle and transit trips to the Project. The increase in new vehicle trips is estimated at 1,368 trips in the Friday p.m. peak hour of the resort (9:00-10:00 p.m.), and 1,810 trips in the Saturday p.m. peak hour (10:00-11:00 p.m.). New vehicle trips will result in increased volumes on several roadways under MassDOT or DCR jurisdiction, including Route 16 at Wellington Circle, Santilli Circle, and Sweetser Circle, elsewhere along Route 16, and the I-93 Northbound off ramp at Sullivan Square. Improvements are proposed at Wellington Circle, Santilli Circle, and Sweetser Circle, other intersections along Route 16, and at Sullivan Square. Based on MassDOT's evaluation of the assessments presented and reviewed under MEPA, MassDOT finds that the roadway improvements and other measures proposed will adequately mitigate the Project's vehicular traffic impacts.

Based on the proposed Transportation Demand Management ("TDM") program, many trips to the Project will occur on transit and non-single occupancy vehicles ("SOVs"). New transit and other non-SOV person trips are estimated at 979 trips in the Friday p.m. peak hour. Parking demand data will be collected monthly, or more frequently, through the resort's parking control system and will be documented in the annual monitoring program report. In addition, improvements are proposed at Sullivan Square, Wellington, and Malden Center MBTA stations and at bus stops along Lower Broadway/Alford Street (Route 99) in the City of Everett to enhance bus and/or shuttle bus access and utilization.

Specific Mitigation Measures

As part of the MEPA review process, the Project has committed to specific mitigation measures related to MassDOT's jurisdiction as further described in the Secretary's Certificate. Those mitigation measures are listed in Table 4-2: Proposed

Transportation Mitigation Measures by Wynn MA, LLC, and are subject to the receipt of all easements and rights, and federal, state and local approvals after good faith efforts by Wynn MA, LLC.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such improvements prior to opening. Notwithstanding, the foregoing commitment is subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

Table 4-2: Proposed Transportation Mitigation Measures by Wynn MA LLC for MassDOT, Highway Division[1]

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Off-site Transportation Improvements – Everett:			
1. Revere Beach Parkway (Route 16)/Mystic View Road/Santilli Highway/Route 99 Connector Improvements (Santilli Circle)	– Modify the approach from Frontage Road into the rotary to allow for two formal lanes. – Widen circle at Santilli Highway approach to allow for three travel lanes. – Provide improved pedestrian and bicycle connection from Frontage Road to Mystic View Road. – Reconfigure channelizing island on south side of rotary near Mystic View Road. – Provide traffic signal improvements at the signalized locations around the traffic circle. – Provide landscaping improvements to the center of the circle. – Provide new guide signage and pavement markings. – Perform RSA during 25% design. – Incorporate RSA recommendations into final design, where feasible.	$4.1 million	Prior to opening

[1] Note that off-site improvements will either be funded or constructed by the Proponent.

Subject Matter	Improvement Measure	Estimated Cost	Schedule
2. Revere Beach Parkway (Route 16)/ Broadway/Main Street (Sweetser Circle)	– Reconstruct circle and approaches to function as a two-lane modern roundabout – Reconfigure the existing Broadway (Route 99) northbound approach to allow for three travel lanes providing free flow access to Route 16 eastbound. – Provide shared use path on northwest side of rotary to improve bicycle access. – Install new signing to provide direction to bicyclists on how to navigate the rotary safely. – Provide landscaping and improvements on the north side of the circle. – Maintain pedestrian signal across Route 16 eastbound exit from rotary.	$2 million	Prior to opening
Everett total: $6,100,000			
Off-site Transportation Improvements – Medford:			
1. Mystic Valley Parkway (Route 16)/Fellsway (Route 28)/Middlesex Avenue (Wellington Circle)	– Upgrade/replace traffic signal equipment/ signs/pavement markings. – Optimize traffic signal timing, phasing and coordination. – Widen Route 28 northbound to provide an additional left turn lane. – Widen Route 16 westbound to provide an additional through lane in the middle of the intersection. – Reconstruct non-compliant sidewalks and accessible ramps around the intersection to improve pedestrian access. – Provide landscape improvements.	$4.0 million	Prior to opening
2. Mystic Valley Parkway (Route 16)/Route 16 Connector	– Traffic signal retiming and optimization – ADA Improvements	$500,000	Prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
3. Mystic Valley Parkway (Route 16)/Mystic Avenue			
4. Road Safety Audit	– Perform Road Safety Audit (RSA) at the intersection of Mystic Valley Parkway (Route 16)/Route 16 Connector. – Coordinate with MassDOT to identify funding to implement RSA recommendations.	$15,000	Prior to opening
5. Wellington Circle study	– Funding for study of long-term alternatives for reconstruction of Wellington Circle.	up to $1.5 million	Prior to opening
Medford Total Up to: $6,015,000			
Off-site Transportation Improvements – Boston:			
2. Cambridge Street/ I-93 northbound off-ramp	– Upgrade/replace traffic signal equipment – Optimize signal timing, interconnect and coordinate traffic signals. – Install new pavement markings and signing.	$500,000	
Boston Total: $500,000			
Off-site Transportation Improvements – Revere:			
1. Route 16/Route 1A/Route 60 (Bell Circle)	– Upgrade/replace traffic signal equipment/ signs/pavement markings. – Optimize traffic signal timing, phasing and coordination.	$550,000	Prior to opening
Revere Total: $550,000			
Off-site Transportation Improvements – Chelsea:			
1. Route 16/Washington Avenue	– Upgrade/replace traffic signal equipment/ signs/pavement markings. – Optimize traffic signal timing, phasing and coordination.	$275,000	Prior to opening
2. Route 16/Everett Avenue 3. Route 16/Webster Avenue	– Optimize traffic signal timing, phasing, and coordination.	$30,000	Prior to opening
Chelsea Total: $305,000			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Transportation Demand Management Measures			
Transportation Demand Management	– Membership Fee with a Transportation Management Association	$10,000/year	At opening and ongoing
	– Employ a designated Transportation Coordinator for the Project to coordinate efforts, monitor success rates, and manage strategic implementation of traffic reduction programs. – Schedule employee shift beginnings and endings outside specified peak traffic periods. – Carpool/vanpool matching programs. – Dissemination of promotional materials, including newsletters about TDM program in print at the Project's on-site Transportation Resource Center, and online.	$50,000/year	At opening and ongoing
	– Patron Orange Line Shuttle Service to Wellington and Malden Center stations. – 2 Locations, 20 Minute Headways, 20 Hrs./day, 30-50 passenger vehicles.	Up to $3,285,000/ year operating costs	At opening and ongoing
	– Employee Shuttle Buses – 2 Locations, 20 Minute Average Headways, 24 Hrs./day.	Up to $2,400,000/ year operating costs	At opening and ongoing
	– Premium Park & Ride Shuttle Buses – 3 Locations, 90 Minute Headways, 12 Hrs./day.	Up to $1,934,500/ year operating costs	At opening and ongoing
	– Neighborhood Shuttle Buses. – Continuous Loop, 20 Minute Headways, 24 Hrs./day.	Up to $1,100,000/ year operating costs	At opening and ongoing
	– Water shuttle service to the Project Site.	Up to $3,303,000/ year operating costs	At opening and ongoing
	– On-site Full Service MBTA Fare Vending Machine.	$35,000	Prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	– Participation in the MBTA Corporate Pass Program to the extent practical and as allowable pursuant to commercial tenant lease requirements.	Up to $400,000/year	At opening and ongoing
	– Electric vehicle charging stations within the proposed parking garage. Annual operating cost of $166,500.	Installation cost in Project Construction Costs, $166,500/year operating cost	At opening and ongoing
	– Car sharing services in the garage at the Project Site.	Included in Project Construction Costs	At opening and ongoing
	– Preferential parking for car/vanpools and alternatively fueled vehicles.	Included in Project Construction Costs	At opening and ongoing
	– Offering a "Guaranteed-Ride-Home" in case of emergency to employees that commute to the Project by means other than private automobile.	$10,000/ year	At opening and ongoing
Transportation Demand Total Up To: $12,659,000 Operating, $35,000 one-time			
Water Transportation Vessels	– The Proponent will provide dock facilities and customized ferry vessels to support passenger water transportation service between the Project Site and key Boston Harbor landing sites.	Up to $8,600,000	At opening
Water Transportation Total Up To: $8,600,000			
Annual Monitoring and Reporting Program	– Post-development traffic and parking monitoring and employee survey program in order to evaluate the adequacy of transportation mitigation measures, including the TDM program.	$30,000	At opening and ongoing

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Sullivan Square traffic monitoring	– Post-development motor vehicle traffic counts in Sullivan Square as well as additional locations to determine whether Project-related vehicle trips through Sullivan Square have exceeded projections during the Friday afternoon peak hour.	$20,000/year for 10 years, if conditions are met	No later than 30 days after the first anniv. of Project opening and annually for 10 years thereafter
Annual Monitoring and Reporting Program Total: $50,000			
Transportation Grand Total One-time Costs Up To: $22,105,000			
Transportation Grand Total Annual Operating Costs Up To: $12,709,000			

Based upon its review of the MEPA documents, the projected Project impacts, and the Department's regulations, the Department finds that the terms and conditions to be incorporated into the approvals required for this Project as specified above will constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the Department's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the applicable permit or approval and Table 4-2, Table of Proposed Transportation Mitigation Measures by Wynn MA LLC.

_____ _____
Department of Transportation, Highway Division

_____
By

_____
[Date]

4.3.3 DRAFT MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, RAIL AND TRANSIT DIVISION/MBTA SECTION 61 FINDINGS

Introduction

These Section 61 Findings for Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Department of Transportation Rail and Transit Division/MBTA ("MassDOT Rail and Transit Division/MBTA").

The following permits and approvals will be required from the Department:

- Land Disposition and Easement Agreements (MassDOT Rail and Transit Division/MBTA)
- Agreements and approvals necessary to construct improvements and to operate within MBTA transit stations and agreements and approvals necessary to relocate bus stops (MassDOT Rail and Transit Division/MBTA)
- Funding to support Orange Line capacity.
- Improvements to MBTA stations

The following draft Section 61 findings reflect the mitigation measures related to the agency's jurisdictions as they may be implemented, subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site"). Extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts

Department of Conservation and Recreation ("DCR") Gateway Park. The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the "Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th, 2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Project Impact Evaluation

As is discussed in Section 2.1.2 of the SSFEIR, public transit access to the Project via the MBTA's Orange Line is a key component of the Project's transportation strategy to maximize patron and employee use of non-automobile travel modes. A significant proportion of Project patrons and employees are expected to travel on the Orange Line to connect with frequent and convenient shuttle bus services provided by the Proponent from the MBTA's Wellington and Malden Center Stations. Project employees are also expected to utilize one of several MBTA bus routes servicing Lower Broadway (Route 99) from Sullivan Square Station.

Specific Mitigation Measures

As part of the MEPA review process, the Project has committed to specific mitigation measures related to MassDOT's jurisdiction as further described in the Secretary's Certificate. Those mitigation measures are listed in Table 4-3: Proposed Transportation Mitigation Measures by Wynn MA LLC for MassDOT Rail and Transit Division/MBTA, and are subject to the receipt of all easements and rights, and federal, state and local approvals after good faith efforts by Wynn MA, LLC.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such improvements prior to opening. Notwithstanding, the foregoing commitment is

subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

Table 4-3: Proposed Transportation Mitigation Measures by Wynn MA LLC for MassDOT Rail and Transit Division/MBTA

Subject Matter	Improvement Measure	Estimated Cost	Schedule
EOEEA – 41 Land Transfer	(Hold in Escrow)	N/A	60 Days following Certificate on SSFEIR
MBTA Everett Shops	– New Entrance – New Loading Dock – Easement on Surface Road	$1.5 million	At opening
Orange Line	Funding to support additional passenger capacity	$410,188 per year operating cost, (assuming a 2018 opening)	At opening and ongoing
MBTA Stations	Improvements to MBTA's Wellington Station to accommodate Wynn patron shuttle service at curbside.	$550,000	Prior to opening
	Improvements to MBTA's Malden Center Station to accommodate Wynn patron shuttle service at curbside.	$25,000	Prior to opening
	Improvements to MBTA's Sullivan Square Bus Station to accommodate new traffic patterns and road alignments.	$4 million	Prior to opening
Non-Highway Transportation Grand Total One-time Costs: $6,075,000			
Non-Highway Transportation Grand Total Annual Operating Costs: $410,188			

Based upon its review of the MEPA documents, the projected Project impacts and the Department's regulations, the Department finds that the terms and conditions to be incorporated into the approvals required for this Project as specified above will constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the Department's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the applicable permit or approval and Table 4-2, Table of Proposed Transportation Mitigation Measures for MassDOT Rail and Transit Division/MBTA by Wynn MA LLC.

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Department of Transportation, Rail and Transit Division/MBTA

_____

By

_____

[Date]

4.3.4 DRAFT MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION SECTION 61 FINDINGS

Introduction

These Section 61 Findings for Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Department of Conservation and Recreation ("DCR"). The following permits and approvals will be required from DCR:

- Access Permit

The following draft Section 61 findings reflect the mitigation measures related to the agency's jurisdictions as they may be implemented, subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site"). Extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts Department of Conservation and Recreation (DCR) Gateway Park. The off-site transportation improvements, some of which involve work on DCR roadways, include improvements to Wellington Circle, Santilli Circle, and Sweetser Circle and to intersections on Mystic Valley Parkway/Revere Beach Parkway (Route 16). The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the "Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th,

2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Project Impact Evaluation

The proposed Project will result in the generation of new vehicle and transit trips to the Project. The increase in new vehicle trips is estimated at 1,368 trips in the Friday p.m. peak hour of the resort (9:00-10:00 p.m.), and 1,810 trips in the Saturday p.m. peak hour (10:00-11:00 p.m.). New vehicle trips will result in increased volumes on several roadways under MassDOT or DCR jurisdiction, including Route 16 at Wellington Circle, Santilli Circle and Sweetser Circle, and elsewhere along Route 16.. Improvements are proposed at Wellington Circle, Santilli Circle, and Sweetser Circle, other intersections along Route 16, and at Sullivan Square. Based on DCR's evaluation of the assessments presented and reviewed under MEPA, DCR finds that the roadway improvements and other measures will adequately mitigate the Project's vehicular traffic impacts on DCR roadways.

Based on the proposed Transportation Demand Management ("TDM") program, many trips to the Project will occur on transit and non- single occupancy vehicles ("SOVs"). New transit and other non-SOV person trips are estimated at 979 trips in the Friday p.m. peak hour. In addition, improvements are proposed at the Sullivan Square, Wellington, and Malden Center MBTA stations and at bus stops along Lower Broadway/Alford Street (Route 99) in the City of Everett to enhance bus and/or shuttle bus access and utilization.

Specific Mitigation Measures

Based on DCR's evaluation of the assessments presented and reviewed under MEPA, DCR finds that the Project will adequately mitigate the Project's impacts. As this Project is currently described, the following mitigation measures are identified in Table 4-4: Table of Proposed DCR Mitigation Measures by Wynn MA, LLC, and are subject to the receipt of all easements and rights, and federal, state and local approvals after good faith efforts by Wynn MA, LLC.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such

improvements prior to opening. Notwithstanding, the foregoing commitment is subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

Table 4-4: Proposed DCR Mitigation Measures by Wynn MA LLC

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Transportation	See Table 4-2, Proposed Transportation Mitigation Measures by Wynn MA LLC. Specific mitigation measures will be required for transportation improvements at Santilli Circle, Sweetser Circle, Wellington Circle, Mystic Valley Parkway and Revere Beach Parkway (Route 16).	As described in Table 4-2	As described in Table 4-2
Open Space	Direct bicycle and pedestrian connection to DCR Gateway Park including construction of a multi-use path, benches, signage, bicycle racks, plantings and lighting.	As Described in Table 4-5	As Described in Table 4-5
Public Access	Funding to DCR for planning and engineering services related to an investigation of a potential pedestrian bridge crossing of the Mystic River linking Somerville and Everett. Participation in a process to study the feasibility of extending the Northern Strand Community Trail to Everett.	$250,000	As Described in Table 4-5
pDCR Total (in addition to mitigation costs included in Table 4-2 and 4-5) $250,000			

o

Based upon its review of the MEPA documents, the projected Project impacts and the Department's regulations, the Department finds that the terms and conditions to be incorporated into the approvals required for this Project as specified above will constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the Department's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the applicable permit or approval and Table 4-4, Table of Proposed DCR Mitigation Measures by Wynn MA LLC.

Department of Conservation and Recreation

By

[Date]

4.3.5 DRAFT MASSACHUSETTS WATER RESOURCES AUTHORITY SECTION 61 FINDINGS

Introduction

These Section 61 Findings for Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Water Resources Authority ("MWRA"). The following permits and approvals will be required from MWRA:

- 8M Permit

The following draft Section 61 findings reflect the mitigation measures related to the agency's jurisdictions as they may be implemented, subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site") extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts Department of Conservation and Recreation (DCR) Gateway Park. The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the "Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th, 2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the

FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Project Impact Evaluation

The Proposed Project will result in the construction of certain offsite transportation improvements, including work on Broadway (Route 99) and Revere Beach Parkway (Route 16). Some of this work may occur in areas where MWRA water and sewer infrastructure is located. Project work will need to be conditioned to ensure that the integrity of infrastructure facilities will be protected.

Specific Mitigation Measures

Based on the MWRA's evaluation of the assessments presented and reviewed under MEPA, the MWRA finds that the Project will adequately mitigate the Project's impacts. As this Project is currently described, one or more of the following mitigation measures may be required as a condition to the 8M permit to ensure the integrity of MWRA infrastructure facilities;

- Additional survey work, test pits and vacuum excavation to precisely identify the locations of utilities and construction monitoring and post construction surveys to ensure the integrity of MWRA infrastructure

Based upon its review of the MEPA documents, the projected Project impacts and the MWRA's regulations, the MWRA finds that the terms and conditions to be incorporated into the approvals required for this Project as specified above will constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the MWRA's jurisdiction. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the applicable permit or approval and the list of mitigation measures above.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such improvements prior to opening. Notwithstanding, the foregoing commitment is subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

_____

Massachusetts Water Resources Authority

_____

By

_____

[Date]

4.3.6 DRAFT MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION SECTION 61 FINDINGS

Introduction

These Section 61 Findings for Wynn Resort in Everett (EEA #15060) have been prepared in accordance with the provisions of M.G.L. c. 30, Section 61 and 301 CMR 11.00 and cover potential state agency actions of the Massachusetts Department of Environmental Protection ("DEP"). The following permits and approvals will be required from DEP:

- Chapter 91 Waterways License;
- Chapter 91 Dredging Permit;
- Notification of Construction/Demolition;
- Air Plan Approval or Environmental Results Program Certification;
- Water Quality Certification (401);
- Asbestos Removal Permit (if required); and
- Superseding Order of Conditions (only upon appeal of local Order).

The following draft Section 61 findings reflect the mitigation measures related to the agency's jurisdictions as they may be implemented, subject to the Proponent obtaining all easements and rights, and federal, state and local approvals. As required by the Secretary's Certificate, the estimated costs and implementation schedule for these mitigation measures are included in the draft Section 61 findings.

Project Description

The Wynn Resort in Everett (the "Project") will consist of a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, and a parking garage and drop-off areas to be constructed on a waterfront parcel totaling approximately 33.9 acres located in Everett, Massachusetts, adjacent to the Mystic River (the "Project Site"). Extensive landscape and open space amenities are planned which include a public gathering area with an outdoor park-like open space, a pavilion, waterfront features, a public harborwalk, and water transportation docking facilities. The Proponent has also committed to certain off-site improvements including extensive transportation improvements and a multiuse path connector ("Gateway Park Connector") from the proposed harborwalk on the Project Site to the existing paths at the Massachusetts

Department of Conservation and Recreation ("DCR") Gateway Park. The Project will be developed in a single phase.

MEPA History

The Expanded Environmental Notification Form ("EENF") for the Project was filed on May 31, 2013. The Secretary of Energy and Environmental Affairs (the "Secretary") issued the Certificate on the ENF on July 26, 2013. The Draft Environmental Impact Report ("DEIR") for the Project was filed on December 16th, 2013 and the Secretary issued a Certificate on the DEIR on February 21, 2014, setting forth a scope for the Final Environmental Impact Report ("FEIR"). The FEIR for the Project was filed on June 30, 2014. The Secretary issued a Certificate on the FEIR specifying the scope for a Supplemental Final Environmental Impact Report ("SFEIR") on August 15, 2014. The SFEIR was filed on February 17, 2015. On April 3, 2015, the Secretary issued a Certificate on the SFEIR. A Second Supplemental Final Environmental Impact report ("SSFEIR") was filed on July 15, 2015. On _____, 2015, the Secretary issued a Certificate on the SSFEIR finding that the SSFEIR adequately and properly complied with the Massachusetts Environmental Policy Act ("MEPA") and its implementing regulations.

Project Impact Evaluation

The Project will include non-water dependent use buildings on filled and flowed tidelands which must be consistent with DEP's Chapter 91 regulations and the Everett Central Waterfront Municipal Harbor Plan. The Project includes hotel, casino, retail, restaurant and convention facilities, all of which are considered Facilities of Public Accommodation as defined in DEP's Chapter 91 regulations.

Specific Mitigation Measures

The Project will provide 6.3 acres of open space in Chapter 91 jurisdictional areas which will be improved with pedestrian amenities to support public access, including a continuous harborwalk. The Project also includes a water transportation dock to facilitate water based access. A pedestrian and bicycle connection is proposed to link the Project site to the DCR Gateway Park. The Proponent will remediate contamination at and from the Project Site. The Project minimizes impacts on coastal wetland resources and includes the restoration of 10,000 square feet of salt marsh and 550 linear feet of coastal bank.

The Project will incorporate stormwater controls consistent with DEP Stormwater Guidelines to improve the quality of urban runoff from the site. The Project will be LEED certified at the Gold level. The Project incorporates a large number of energy efficiency measures, including a combined heat and power plant, in order to reduce energy use and greenhouse gases production.

Based on DEP's evaluation of the assessments presented and reviewed under MEPA, DEP finds that the Project will adequately mitigate the Project's impacts. As this Project is currently described, the following mitigation measures, as identified in Table 4-5: Proposed DEP Mitigation Measures by Wynn MA LLC which are subject to the receipt of all easements and rights, and federal, state and local approvals after good faith efforts by Wynn MA, LLC.

With respect to those improvements that are identified as to be completed "prior to opening," Wynn MA, LLC will use good faith efforts to complete such improvements prior to opening. Notwithstanding, the foregoing commitment is subject to Wynn MA, LLC's ability to obtain permits in a timely manner from the relevant agency.

Table 4-5: Proposed DEP Mitigation Measures by Wynn MA LLC

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Wetlands, Waterways, and Water Quality Certification	The Project will contribute to improved water quality, clean-up and restore of bulkheads and piers, remove trash and litter along the waterfront, and restore and enhance shoreline areas along the Project Site. The Project will also create public access and amenities in currently inaccessible areas of the City of Everett's Central Waterfront. Wetlands mitigation and enhancement measures include: *On-site* – Remediation, revegetation and enhancement of 550 linear feet of existing shoreline with enhanced "living shoreline;" – Removal of invasive vegetation and planting of native herbaceous and shrub vegetation along part of existing Coastal Bank and Riverfront Area; – Transformation of 10,900 +/- SF of disturbed Coastal Beach/Tidal Flats, Coastal Bank, and Riverfront Area to Salt Marsh; – Dredging to provide ample	$28,736,044	During construction and prior to opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	draft for water transportation, recreational vessels and a proposed floating dock; – Debris clean up within the Land Under the Ocean, Coastal Beach and Coastal Bank resource areas; – Replacement of existing bulkhead and construction of new bulkheads within areas of existing degraded Coastal Beach and Coastal Bank areas; and – A Stormwater Pollution Prevention Plan (SWPPP) will be prepared in support of a Notice of Intent (NOI) filing with the EPA for coverage under the National Pollution Discharge Elimination System (NPDES) Construction General Permit (CGP). Substantial public benefits and water-dependent uses along the Project Site's waterfront, transforming the Site into a vibrant and active development by providing: – High quality open space along the Mystic River – 100% of the ground floor will be Facilities of Public Accommodation – A water transportation dock – A continuous harborwalk along the waterfront *Off-site* Direct bicycle and pedestrian connections to the DCR Gateway Park and to Broadway including construction of a multi-use path, benches, signage, bicycle racks, plantings and lighting.		
Wetlands, Waterways, and Water Quality Certification Total: $28,736,044			

Subject Matter	Improvement Measure	Estimated Cost	Schedule
Stormwater	The Project will incorporate new stormwater management systems in compliance with applicable requirements of State and City of Everett Stormwater Management Standards. The SWPPP and long-term stormwater improvements will provide stormwater mitigation measures to be implemented both during and after construction to improve water quality Implementation of a stormwater management system that will dramatically improve the quality of runoff on-site including: *On-site* – Two new outfalls will discharge treated stormwater into the Mystic River; – Green Roof; – Best Management Practices ("BMPs") such as pavement sweeping, deep sump catch basins, four (4) proprietary stormwater separators, and stormwater media filters will be constructed. These BMPs will be designed to remove at least 80 percent of the average annual load of Total Suspended Solids (TSS); and – Catch basins, silt fences, hay bales and crushed stone will be used during construction to prevent sediment removal from entering runoff. *Off-site* – Offsite mitigation measures associated with transportation improvements may include	$3,056,000	Prior to Opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	bioretention or subsurface infiltration chambers, deep sump catch basins or proprietary stormwater separators.		
Stormwater Total: $3,056,000			
Wastewater	Funding for sewer system improvements to remove Infiltration and Inflow ("I/I") equivalent to 4 gallons removed for every gallon of new wastewater generated; currently estimated at 283,489 gallons per day – Grease traps and gas/oil separators will be installed;	Assume $10.00/ gallon	During construction
Wastewater Total Approximately: $ 2,834,890			
Air Plan Approval or Environmental Results Program/Greenhouse Gas Reductions	The Project buildings will be designed to be certifiable under the Green Building Council Leadership in Energy and Environmental Design (LEED) rating of Gold or higher. The Project will be operated utilizing a series of best operating practices consistent with LEED principles to maintain the energy use, water efficiency, atmospheric, materials and resources use, and indoor air quality goals. The Project will commit to a comprehensive list of Energy Efficiency Measures (EEM) that are predicted to reduce stationary source CO2 emissions for the building by 18.4% relative to ASHRAE 90.1-2010, or for the entire Project Site (including buildings, garage ventilation, and lighting, exterior lighting	57,000,000	Prior to Opening

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	and water/wastewater utilities) by 27.4% relative to ASHRAE 90.0-2010 standards. Proposed EE measures include: – Install street trees and lighting; – Cool roofs; – Central chiller plant with better efficiency than Code; – Demand Control Ventilation (DCV) for the casino, public entertainment, and retail areas; – Energy Recovery Ventilation (ERV) to reduce chiller energy use; – Building envelopes with roof and window insulation better than Code; – Skylights over the entry atrium and along the retail promenade (daylighting controls will be tied to this extensive system of skylights); – Lower light power density 20% better than Code; – Low-energy Electronic Gaming Machines (EGMs); – Metal halide lighting for all parking structures; – High efficiency elevators with regenerative VVVF drives and LED lights; – Demand Control Exhaust Ventilation (DCEV) with variable frequency drive (VFD) fans for enclosed parking structures and metal halide lighting for all parking structures; – Kitchen and restaurant refrigeration energy efficiency design to reduce energy use; – Energy-STAR appliances;		

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	– Enhanced building commissioning; and – Occupancy controls for non-occupied or infrequently occupied spaces. The Project has adopted the following Renewable Energy Measures: – Photo-voltaic (PV) system on the podium building roof or other locations, and/or purchase from local service providers of Green Power of annual electric consumption equaling 10% of the Project's annual electrical consumption; – Cogeneration plant using a nominal 1-MW microturbine, providing approximately 20% of the Project's annual electrical consumption and significant amounts of absorption cooling, heat and hot water. Intersection improvements to reduce vehicle idling and Transportation Demand Management measures to reduce trips listed above will reduce Project-related motor vehicle CO_2 emissions by 13.0%. When combined, (stationary source plus transportation), the Project's total CO2 emissions reductions are 25.7% percent compared to the Base Case. The Project will also plan for and account for the effects of Sea Level Rise by elevating the proposed structures to 9.35		

Subject Matter	Improvement Measure	Estimated Cost	Schedule
	feet above the 100-year flood level. The Project will also incorporate the following design criteria: – Parking garages entrances and other openings into below grade spaces will be elevated a minimum of 3.35 feet above the 100-year flood level, or will be sufficiently flood proofed to avoid damage from coastal storms, and – Critical infrastructure and HVAC equipment will be elevated above projected flood levels. –		
Air Plan Approval or Environmental Results Program and GHG Reduction Total: $57,000,000			
GRAND TOTAL DEP MITIGATION MEASURES $91,626,934			

Based upon its review of the MEPA documents, the projected Project impacts and the Department's regulations, the Department finds that the terms and conditions to be incorporated into the approvals required for this Project as specified above will constitute all feasible measures to avoid damage to the environment, including consideration of the potential effects of climate change, and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to the Department's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the applicable permit or approval and Table 4-5: Proposed DEP Mitigation Measures by Wynn MA LLC.

Department of Environmental Protection

By

[Date]

CHAPTER 5

Responses To Comments on the Supplemental Final Environmental Impact Report

CHAPTER 5: SECRETARY'S CERTIFICATE AND RESPONSES TO COMMENTS ON THE SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT REPORT

Comment Code	Entity
Agencies	
EOEEA	Executive Office of Energy and Environmental Affairs
MWRA	Massachusetts Water Resources Authority
MAPC	Metropolitan Area Planning Council
CZM	Coastal Zone Management
DCR	Department of Conservation and Recreation
DEP	Department of Environmental Protection
DMF	Division of Marine Fisheries
MassDOT	Massachusetts Department of Transportation
Massport	Massachusetts Port Authority
DOER	Massachusetts Department of Energy Resources
Elected Officials	
Everett	City of Everett Mayor- Carlo DeMaria, Jr.
Melrose	City of Melrose Mayor – Robert J. Dolan
Somerville	City of Somerville Mayor – Joseph A. Curtatone
Malden	City of Malden Mayor – Gary Christenson
Revere	City of Revere Mayor – Daniel Rizzo
Revere (2)	City of Revere Mayor – Daniel Rizzo
Municipalities	
Boston – BTD	Boston Transportation Department
Boston – ED	Environment Department
Boston - BRA	Boston Redevelopment Authority
Boston – BPR	Boston Parks and Recreation Department
Medford – CD	Office of Community Development
Melrose - PBMA	Melrose Pedestrian and Bicycle Advisory Committee

Comment Code	Entity
Somerville - BAC	Somerville Bicycle Advisory Committee
Organizations	
MyRWA	Mystic River Watershed Association
TBHA	The Boston Harbor Association
Stantec	Stantec Consulting Services
GPI	Greenman – Pedersen, Inc.
LL&C	Liz Levin & Company
MIT	MIT Department of Civil & Environmental Engineering – Frederic Salvucci
B2C	Bike to the Sea, Inc.
GFC	Gardens for Charlestown, Inc.
LSA	Livable Streets Alliance
RA/SS	Rutherford Avenue/Sullivan Square Advocacy Group
CLCT	Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)
CMA	Charlestown Mothers Association
ECGA	East Coast Greenway Alliance
DDRC	DDR Corp.
Individuals	
JV	James Vitagliano
TL	Thomas Lincoln
ER	Ellin Reisner
LL	Lynne C. Levesque
SM	Samantha A. Miko

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EOEEA-1	Comment: While the SFEIR presents significant progress in identifying traffic and transportation impacts, there are still Scope items that were not fully addressed, including the identification of measures to ensure MBTA operations are protected in the long-term and identification of associated legally enforceable Section 61 Findings. In addition, the MBTA and the Proponent completed a Land Transfer necessary to support the construction of access to the project site. MassDOT has acknowledged that the conveyance of the land to the Proponent prior to the conclusion of the MEPA process is a violation of the MEPA statute. Therefore, MassDOT and the Proponent must file an SSFEIR to develop appropriate remedies to

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	satisfy the above-mentioned issues. Response: This SSFEIR thoroughly addresses these items as follows: protection of MBTA operations in Section 1.3.4, pages 1-6 through 1-9; identification of legally enforceable Section 61 Findings in Section 4.3; and MBTA land transfer history and remedies in Sections 1.3.2 through 1.3.6, pages 1-5 through 1-12.
EOEEA-2	Comment: Specifically, the Scope for the SSFEIR will address the following: 1) Provide an explanation of and remedy for the premature conveyance of land from MassDOT/MBTA and its acceptance by the Proponent prior to the completion of MEPA review; 2) Commit to a specific dollar amount for an annual operating subsidy to the MBTA to support service and capacity improvements on the Orange Line; 3) Clarification of the Traffic Impact Assessment and supplemental data and analysis; 4) Revised Draft Section 61 Findings that incorporate commitments associated with the three requirements listed above; and 5) Response to Comments document that provides clear and specific responses to issues raised. Response: This information is provided in the SSFEIR as follows: 1) in Section 1.3, pages 1-4 through 1-12; 2) in Section 2.3.3, page 2-27; 3) in Chapter 3; 4) Section 4.3; and 5) this Chapter 5 Responses to Comments on the SFEIR.
EOEEA-3	Comment: The MassDOT comment letter acknowledges that, pursuant to the MEPA regulations, this action constituted Final Agency Action and, therefore, did not comply with the MEPA Statute. The comment letter indicates that MassDOT and the MBTA are committed to adhering to the MEPA regulations and process. MassDOT has committed to remedy this violation and will work with the MEPA Office and the Proponent on the development of appropriate remedies. Such a remedy could include reversal of the Land Transfer or placement of the Transfer in escrow until MEPA review is completed. The MassDOT comment letter indicates that the Proponent has agreed to place the property in escrow until 60 days after the issuance of a Certificate of adequacy on the final MEPA review document. Response: As set forth in Section 1.3.6, page 1-11, on April 15, 2015, Proponent and the Wynn Parties entered into the Escrow Agreement.

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	Pursuant to the terms of the Escrow Agreement, Wynn executed a Quitclaim Deed to convey the property that is subject to the Deed back to the MBTA. In addition, the Wynn Parties and the MBTA executed an agreement terminating the Easement Agreement (a copy of the Termination of Easement Agreement is attached hereto as Appendix B). Finally, the MBTA has placed Six Million Dollars ($6,000,000), the full amount of the purchase price paid by Proponent, into escrow. The escrow agreement provides, in pertinent part, that the conveyance of the property shall be deemed to have not taken place unless and until the Secretary of Energy and Environmental Affairs has determined that, for the Project that includes work or activities on the MBTA Everett Shops property: (1) no Environmental Impact Report is required; or (2) a single or final Environmental Impact Report is adequate and sixty (60) days have elapsed following publication of notice of the availability of the single or final Environmental Impact Report in the Environmental Monitor in accordance with 301 CMR 11.15(2), provided that the MBTA shall reconsider and confirm or modify the conveyance of the property pursuant to the Deed and any conditions following MEPA review. Pursuant to the terms of the Escrow Agreement, in the event the MBTA determines that the transaction requires no modifications or conditions or other mitigation, the escrow agent will return the Quitclaim Deed and Termination of Easement Agreement to the Proponent and the money to the MBTA. In the event the MBTA determines that the transaction requires modifications or conditions or other mitigation, the parties are obligated to work in good faith to document such required modifications, conditions or mitigation commitments after which the escrow agreement will return the Quitclaim Deed and Termination of Easement Agreement to Proponent and the money to the MBTA and record any such modifications. In the event that the parties cannot agree to any required modifications, conditions or other mitigation, the escrow agreement will file the Quitclaim Deed and Termination of Easement Agreement and return the money to Proponent.
EOEEA-4	Comment: As noted in the Scope, the SSFEIR must address how MBTA infrastructure and operations are protected under the terms of the transfer and include revised Draft Section 61 Findings. In addition, Secretary Pollack has directed MassDOT and MBTA staff to develop a more robust internal process to flag land transfers and real estate transactions that are

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	subject to MEPA to ensure compliance prior to execution. Response: This SSFEIR addresses the MBTA infrastructure and operations in Section 1.3.4, pages 1-6 through 1-9. The Proponent understands from MassDOT and MBTA staff that they have implemented a more robust internal process to flag land use transfers and real estate transactions that are subject to MEPA review.
EOEEA-5	Comment: The Proponent consulted extensively with MassDOT and the MBTA since the FEIR. In addition, the Proponent has met separately with the City of Boston and BTD. The SFEIR indicates that the Proponent has worked hard to reconcile differences between these stakeholders' suggestions. The SFEIR does not identify what required reconciling or identify how the resulting mitigation balances competing concerns. The Response to Comments document does not acknowledge why the recommended consultation, which would provide a more direct way to reconcile competing concerns, did not occur. It is unclear whether the Proponent attempted to convene a joint meeting to reconcile differences and was unable to secure participation from the parties or if other reasons prevented such a meeting. Regardless, a joint meeting was not held. Response: The primary suggestion by BTD was to divert some traffic away from the Sullivan Square rotary by using other streets or creating new ones, such as Beacham Street Extension/MBTA busway and Spice and D streets. The Proponent took this suggestion into consideration while developing the current mitigation plan. These new or improved streets and changes in the travel patterns led to the need for modifications to the Sullivan Square bus station and the associated parking. The Proponent reviewed existing and proposed bus operations and developed a new parking layout. A joint meeting was held on January 26, 2015, among the Proponent, the MBTA, and BTD to discuss the revised plans and analyses. The MBTA agreed that the plan was much improved for their bus operations.
EOEEA-6	Comment: Specific comments from the City of Boston, based on analysis provided by its peer review consultant, note that the City did not have an opportunity to address underlying assumptions (assignment, intersection operations, signal coordination, and queuing impacts) or to participate in model development and calibration process for this complex modeling effort. The letter indicates that they requested AM peak hour traffic operations data prior to providing feedback and adequacy of mitigation

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	which was not provided. They note that spillover effects and queuing will result in poor operations. It notes that a key element of this plan is the introduction of left-turns from Cambridge Street eastbound into the MBTA station via Beacham Street Extension and on to Maffa Way and Main Street. City of Boston comments indicate that it has investigated upgrading this roadway link and concluded that the introduction of left-turns at this location would be problematic because the close proximity of this intersection to the Cambridge Street intersection with the I-93 off-ramp would creating weaving and queuing problems. Traffic turning right from the ramp and then looking to turn left into Beacham Street Extension would get trapped and block through travel lanes on Cambridge Street. Accordingly, the City's plan for this location limited left turns to buses only. These comments also question the allocation of a large number of vehicle diversions to Spice Street and D Street to avoid delays entering Sullivan Square because, they note, the route is available today and sees very little use. They assert that proposed upgrades will not increase capacity or improve travel times. Response: The a.m. peak hour analysis has been performed and is included in Section 3.3.4, page 3-6, of this SSFEIR. Another aspect of the proposed mitigation at the I-93 Northbound off-ramp and Cambridge Street is the reassignment of the ramp's left lane from an exclusive left-turn lane to a shared left-turn/through lane. This will allow motorists to use the left lane on the ramp to turn right into the left travel lane on Cambridge Street eastbound, which would allow for easy entry into the left-turn lane to Beacham Street extension with no need for merging. Although Spice Street and D Street are available today for traffic to use to avoid passing through the Sullivan Square rotary, the pavement is in poor condition, which does not encourage use of the route. The Proponent will improvement pavement conditions by repaving both the streets and sidewalks. There is also no signage directing traffic to use Spice and D streets as an alternate route, which the Proponent has proposed as part of the improvements to the area.
EOEEA-7	Comment: In addition, the City of Boston comments identify concerns with the existing peak hour vehicle queues on Cambridge Street which begin at the Sullivan Square rotary and extend beyond the I-93 off-ramp. The SFEIR

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	reports that the rotary intersection will operate at 114 percent of capacity during the Friday, PM peak hour which the City asserts demonstrates that there will continue to be a problem. The letter identifies concerns that the proposed signalization of the Beacham Street/Main Street intersection will stop westbound traffic and create vehicle queues. Given the curved alignment of the roadway leaving the Sullivan Square rotary, sight lines may be limited to the back of the queue and create a safety problem. Response: The existing queuing issues on Cambridge Street are partially the effect of poor coordination between the signals. The proposed mitigation plan improves both the signal hardware and the timing and phasing plan. As part of the design process, stopping sight distance will be assessed for cars entering Main Street from the rotary. If it is determined that sight distance is inefficient along any point on Main Street, particularly along the horizontal curve, the Proponent will recommend and commit to measures to improve sight distance (e.g., removal of vegetation or other objects hindering sight distance) and/or measures to warn motorists of insufficient sight distance, such as warning signage and pavement markings.
EOEEA-8	Comment: MassDOT comments indicate that it supports the proposed interim mitigation and that the study is necessary to address effective alternatives for addressing existing operational deficiencies. Previous comments from DCR note that the system appears to be at or near the limit of at-grade solution. In addition, DCR noted concerns that the proposed improvements would impact existing open space and would require tree removal. DCR comments on the SFEIR indicate that the revised mitigation has addressed concerns regarding impacts to open space. Response: We are pleased that MassDOT endorsed the proposed mitigation and that DCR's concerns about the impact on open space have been adequately addressed. The Proponent is supportive of efforts to identify a solution to improve the existing operational deficiencies in Sullivan Square and looks forward to continued participation in that planning process.
EOEEA-9	Comment: Comments from the City of Medford identify several concerns with traffic, including questions regarding the process, funding and timing of the study [for Wellington Circle long-term solution] and its relation to

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	the schedule for the casino development. In addition, they identify concerns that impacts are underestimated and do not account for the likely impacts on City streets and I-93. Response: The Proponent will work with MassDOT, DCR, and the City of Medford regarding the process and timing for the study at Wellington Circle. The Proponent has committed up to $1.5 million for the study, as detailed in its Section 61 findings, Chapter 4 of this SSFEIR. The Proponent has identified additional signal timing and phasing changes at Mystic Valley Parkway (Route 16)/Harvard Street/Mystic Avenue (Route 38) and at Mystic Valley Parkway (Route 16)/I-93 Southbound Exit 31. These proposed changes to the mitigation are detailed in Section 3.4.1.1, pages 3-11 through 3-12.
EOEEA-10	Comment: Comments from MassDOT indicate that the Proponent should refine the design [of Santilli Circle], improve lane utilization and optimize signage location to ensure that casino patrons, a number of which will be unfamiliar with the area, can maneuver safely and efficiently through the rotary. Response: The Proponent will work with MassDOT, DCR, and the City of Everett during the design process to refine the design to improve lane utilization and optimize signage and pavement markings to ensure that all users can maneuver safely and efficiently.
EOEEA-11	Comment: DCR comments request revisions to the plans to reduce accidents at the Revere Beach Parkway at Garfield and Webster Avenues intersection, as requested in comments on the FEIR. In the SFEIR, the Proponent concluded that left turns can be made simultaneously from Garfield Avenue and Webster Avenue with the existing intersection geometry and that split phasing is not necessary. DCR comments note traffic congestion and documented accident history are associated with these simultaneous left turning movements, and that consideration of additional solutions is necessary. Response: The Proponent will work with DCR during the design phase to ensure that a safe signal phasing solution is implemented at Revere Beach Parkway (Route 16)/Webster Avenue/Garfield Avenue.

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EOEEA-12	Comment: Although the Proponent has proposed an alternative for providing bicycle access, many comments express concern with the design and indicate it will not provide effective or safe access. It requires bicyclists to dismount as they approach Sweetser Circle and walk on sidewalks to ramp down to the bike path on Route 99. Comments from MassDOT indicate that right-of-way limitations present a challenge to providing full accommodations. MassDOT will work with the Proponent during permitting to determine whether an alternative that will provide full accommodation of cyclists can be developed. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the Northern Strand Community Trail. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the Northern Strand Community Trail, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle. However, the advocacy community has provided some suggestions for other improvements that could be made at Sweetser Circle. The Proponent will continue to work with the advocates, the City of Everett, DCR, and MassDOT to refine the design and make further improvements, if possible.
EOEEA-13	Comment: The SFEIR includes a revised analysis of projected Orange Line peak loads for weekday and weekend service days between Wellington and Back Bay Stations. The projections indicate that loading standards would be violated at least during the Friday PM peak for the project. The SFEIR does not consider provision of an operating subsidy to the MBTA to support service and capacity improvements on the Orange Line. I note the importance of robust and dependable transit options to the attainment of mode share goals and MassDOT comments that a subsidy is necessary to mitigate the projects impacts. Response: Chapter 2 of this SSFEIR addresses a proposed Orange Line operating subsidy by the Proponent to the MBTA to mitigate impacts of capacity exceedance. In addition, the Proponent has proposed an additional subsidy for the purpose of promoting train ridership in the evening and late night hours as part of the pursuit of aggressive mode

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	distribution (see Section 2.3.2, page 2-26).
EOEEA-14	Comment: I note that City of Boston comments disagree with the conclusions of the traffic analysis and express concern with signal timing, queuing and safety. Response: The Proponent has demonstrated that its mitigation will improve traffic operations and safety. For additional information, see response to comment BTD-3.
EOEEA-15	Comment: The Proponent should continue to work with MassDOT and the City of Everett to seek an alternative to connect the bicycle lanes to Route 99, north of Route 16. Further, the Proponent has noted that based on the latest discussions with the City of Everett, the Rail Trail project which would improve bicycle connections along Route 99, is expected to be constructed in the near future. I received many comment letters requesting that the Proponent consider a commitment to design and build an extension of the Northern Strand Community Trail from the terminus at Wellington Street in Everett to the Mystic River. I expect the Proponent will consider supporting the completion of this trail and note that this may be an appropriate candidate for funding through the Community Mitigation Fund. Response: The Proponent agrees that an extension of the Northern Strand Community Trail to the Mystic River would be extremely beneficial to the Project and its neighbors and surrounding communities. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the Northern Strand Community Trail. The City of Everett is optimistic that a feasible plan to extend the Northern Strand Community Trail will be identified once field survey is completed, and that the design process can proceed before the Project opens. The Proponent will support the stakeholders' efforts to petition for funding through the Community Mitigation Fund.
EOEEA-16	Comment: Mode share goals were reviewed and approved by MassDOT with the understanding that actual trip generation and travel patterns will be tracked through the TMP. If monitoring demonstrates that proposed mitigation is not effective in accommodating the future traffic volumes at

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	key area intersections impacting the state highway system, the Proponent will be responsible for identifying and implementing additional improvements at these locations. These may include improvements to roadway infrastructure and design, adjustments to traffic signal timing and phasing modifications, optimization of the coordinated/interconnected signal system, and/or further refinements of the TDM program to improve its effectiveness. Comments from the City of Boston and others express concerns with the monitoring and also suggest ways to enhance the effectiveness of the program. Response: The Proponent has committed to mitigation and monitoring as outlined in Section 4.3, Draft Section 61 Findings.
EOEEA-17	Comment: I support the commitment in the TMP to specific triggers for the addition of TDM measures. The SFEIR indicates that additional measures will be required if any of three conditions associated with increased traffic volumes are exceeded. However, it remains unclear how the Proponent will measure the operational deficiencies at the monitored locations and determine which trips are casino related. Several commenters have raised concerns with regarding improving effectiveness of TMP, including the relatively short 5-year commitment to monitoring. The Proponent should consider comments provided on the TMP and should consult with MassDOT regarding the extension of the monitoring period. Response: The monitoring program has been structured to measure Project-related traffic at the access points to the Project in order to determine if the traffic volume projections for the Project are consistent with those documented and assessed as a part of the environmental review process. In addition, critical off-site roadways and intersections that were identified by MassDOT and in the comment letters are also included in the monitoring program. By measuring traffic volumes and trip patterns at the Project access points and then extending to critical roadways and intersections, Project-related impacts can be ascertained and compared to the projected impacts. This approach will afford the ability to undertake corrective measures if deemed necessary to address measured vs. projected impacts as they relate to Project-related traffic, including expanding and refining the elements of the TDM program. As indicated, the exact timing and duration of the monitoring program will be determined in consultation with MassDOT and will be reflected in the MassDOT Section 61 Finding.

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EOEEA-18	Comment: It is important to note that while MHPs often contain elements of local planning related to waterfront uses and development, state approval of MHPs is limited to the formal evaluation and approval of substitutions to specific discretionary standards of the Waterways Regulations. As such, review and approval of MHPs is not intended to consider all of the potential project impacts associated with a development proposal, nor all of the public benefits associated with a project within a planning area. Response: The potential project impacts and public benefits of the Project have been described in detail in this and prior MEPA filings. These impacts, benefits, and consistency with the Everett MHP will be further detailed in the Chapter 91 license application. This license application will be subject to an additional comment period and public participation process.
EOEEA-19	Comment: According to the SFEIR, the remaining stormwater issues identified on the FEIR would be addressed in permitting. In the absence of additional information in the SFEIR, the Proponent is reminded that an erosion resistant design of the stormwater outfalls is required for the maximum stormwater discharge velocity, in accordance with the Storm water Management Handbooks, Volume 3, Chapter 1, page 2. The Stormwater Management Standard 1 also is clear that new stormwater outfalls may not cause erosion of wetlands or waters of the Commonwealth. Rip-rap pads proposed may not be sited within more coastal wetland resources, except for land subject to coastal storm flowage or riverfront area, in accordance with the wetland regulations in 310 CMR 10.05(6)(k). Response: A Notice of Intent (NOI) will be filed with the Everett Conservation Commission in August 2015. This NOI will provide detailed information regarding the impacts and mitigation measures proposed for the Project. The new stormwater outfalls will be equipped with erosion control measures, including concrete articulated mattress scour protection, and Project activities will not cause erosion of wetlands or waters of the Commonwealth.
EOEEA-20	Comment: The narrative on the GHG modeling has not identified the sources of this stationary source emissions increase. Although the reduction of stationary source emissions has increased, the transportation emissions reduction remains unchanged from the FEIR at 358.6 tpy (13

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	percent). This suggests that additional traffic mitigation may be offsetting the increase in traffic volume corresponding with the refinements to the project. Accordingly, avoiding an increase in stationary source emissions, and maintaining or reducing the emissions estimated in the FEIR appears to be a reasonable goal going forward with the project design. To that end, the Proponent is encouraged to consider additional improvements in the energy efficient designs and expansion of the commitment to renewable energy and to incorporate these commitments into revised Section 61 Findings. Response: The comment includes an incorrect assumption that stationary source emissions increased from the FEIR to SFEIR. The CO_2 emissions, and emission reduction percentages, in the FEIR and SFEIR cannot be compared because the two documents used different Base Case energy codes, as required by the Secretary of Environmental Affairs (see page 26, second paragraph of the Certificate on the SFEIR dated April 3, 2015). Since additional energy mitigation was adopted by the Project after the FEIR was filed (see page 2 of the GHG report included in the SFEIR), stationary source emissions stated in the SFEIR are less than those presented in the FEIR, i.e., the project has already adopted "additional improvements to the energy efficient design.
EOEEA-21	Comment: The DOER notes that adoption of PV, co-generation, and numerous efficiency measures will be included and commends the project on both the number and degree of mitigations included. I note that the Section 61 Findings should address clarifications raised in its comment letter from MassDEP and DOER. A revised Section 61 Finding should specify how many EGMs will be low-energy and the EGM total. It also would be useful to provide comparable information on EGM energy use, as was available in the Section 61 Finding for the cogeneration plant, such as clarification of the energy savings expected with the low-energy EGM to be used. Response: The revised Section 61 Finding states that 80% of all EGMs will be low-energy design, consistent with the assumptions in the GHG analysis for the SFEIR. Whereas the total number of gaming positions increased by 10% from the FEIR to the SFEIR, the assumed number of EGMs increased from 3,200 (FEIR) to approximately 3,500 (SFEIR), and the assumed number of low-energy EGMs in the SFEIR is 80% of 3,500 or 2,800. The GHG report in the SFEIR (Appendix C, page 25) states that low-energy

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	EGMs are expected to reduce electricity use by 1,400 MWhr/year, though it should be noted this is a high estimate assuming continual machine use. Due to the uncertainty regarding actual EGM use over an annual period, an accurate estimate of actual electrical use reduction attributable to low-energy EGMs is difficult to make. The Section 61 Finding has been changed to read: "Low-Energy Electronic Gaming Machines (EGMs) will be installed for at least 80% of all EGMs and will be capable of reducing electrical use by up to 1,400 MWhr/year assuming continuous machine use."
EOEEA-22	Comment: The project Proponent is advised that the construction of the service road and shared entrance must comply with all applicable requirements of Massachusetts General Law, Chapter 21E (M.G.L., c.21E) and the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The Proponent should consult with MassDEP regarding associated changes to its remediation plans and consistency with the MCP. Response: The Proponent is aware of its obligations under MGL c. 21E, and has been in close touch with MassDEP regarding its plans for remedial response actions. The Proponent expects to file a RAM Plan which will deal with remediation in the vicinity of the service road and shared entrance later this year.
EOEEA-23	Comment: As noted previously, the MassDOT comment letter clearly acknowledges that the execution of the Land Transfer did not comply with the MEPA Statute and takes responsibility for the premature conveyance of the land. I appreciate that MassDOT has taken responsibility for this error and committed to work with the MEPA Office and the Proponent on the development of appropriate remedies. Remedies will include adequate public review of the process and specific conditions to satisfy and protect in the long-term any potential impacts to the MBTA facilities and operations. A remedy may include reversal of Land Transfer or placement of the property in escrow pending issuance of a Certificate finding that the final review document adequately and properly complies with MEPA and the associated time period has expired. Response: As set forth in Section 1.3.6, page 1-11, on April 15, 2015, Proponent and the Wynn Parties entered into the Escrow Agreement. Pursuant to the terms of the Escrow Agreement, Wynn executed a Quitclaim Deed to convey the property that is subject to the Deed back to the MBTA. In addition, the Wynn Parties and the MBTA executed an

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	agreement terminating the Easement Agreement (a copy of the Termination of Easement Agreement is attached hereto as Appendix B). Finally, the MBTA has placed Six Million Dollars ($6,000,000), the full amount of the purchase price paid by Proponent, into escrow. The escrow agreement provides, in pertinent part, that the conveyance of the property shall be deemed to have not taken place unless and until the Secretary of Energy and Environmental Affairs has determined that, for the Project that includes work or activities on the MBTA Everett Shops property: (1) no Environmental Impact Report is required; or (2) a single or final Environmental Impact Report is adequate and sixty (60) days have elapsed following publication of notice of the availability of the single or final Environmental Impact Report in the Environmental Monitor in accordance with 301 CMR 11.15(2), provided that the MBTA shall reconsider and confirm or modify the conveyance of the property pursuant to the Deed and any conditions following MEPA review. Pursuant to the terms of the Escrow Agreement, in the event the MBTA determines that the transaction requires no modifications or conditions or other mitigation, the escrow agent will return the Quitclaim Deed and Termination of Easement Agreement to the Proponent and the money to the MBTA. In the event the MBTA determines that the transaction requires modifications or conditions or other mitigation, the parties are obligated to work in good faith to document such required modifications, conditions or mitigation commitments after which the escrow agreement will return the Quitclaim Deed and Termination of Easement Agreement to Proponent and the money to the MBTA and record any such modifications. In the event that the parties cannot agree to any required modifications, conditions or other mitigation, the escrow agreement will file the Quitclaim Deed and Termination of Easement Agreement and return the money to Proponent.
EOEEA-24	Comment: The SSFEIR must include a description of the parcels subject to the Land Transfer and their relationship to the overall development supported by existing and proposed conditions plan. It should clearly describe the infrastructure and operations associated with the Everett Shops and identify issues that the MBTA has identified as critical to ongoing operations, including protecting the 24 hour nature of the facility, sufficiency of access and internal circulation, and identify any measures that should be contemplated to avoid future conflicts between

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	maintenance and the casino and hotel. Response: Please see Sections 1.3.1 through 1.3.3, pages 1-4 through 1-6, and the attached ANR plan (Figure 1-8) for a description of the Acquired Parcels. In addition, please see Section 1.3.4, page 1-6, for a description of impacts and mitigation to operations at the MBTA Everett Shops. See also response to Revere-4 below.
EOEEA-25	Comment: The SSFEIR should reiterate the description of the bidding process included in the SFEIR and provide supporting documentation including the Notice of Proposal and Request for Response, Offer Letter, Notification of Successful Bidder Letter from MBTA to Wynn, Quitclaim Deed, Easement Agreement, and Closing Statement. Response: Please see Section 1.3.5, page 1-9, for a description of the bidding process; Section 1.3.6, page 1-11, for a description of the escrow arrangements; and Appendix B for all related documents.
EOEEA-26	Comment: The SSFEIR must demonstrate that the Land Transfer will avoid, minimize and mitigate impacts to the facility and its operations. These commitments must relate to the concerns identified by the MBTA and should be incorporated into the MassDOT draft S61 Findings. The draft S61 Findings included in the SFEIR do not specifically address the Land Transfer but, rather, identify overall mitigation proposed for the access and service road which, presumably, is designed to protect those interests. The MassDOT S61 Finding should be revised to separately identify mitigation measures associated with MassDOT Agency Actions (e.g. Vehicular Access Permit) and MBTA Agency Actions (e.g. Land Transfer). Response: Please see Section 4.3.3, page 4-37, for revised draft Section 61 Findings.
EOEEA-27	Comment: The SSFEIR must include a commitment to an annual operating subsidy. The SSFEIR and draft Section 61 Findings should identify the amount of the subsidy, how the amount was determined and how the funds will be managed and used. Response: Section 2.3.1 of this SSFEIR proposes an Orange Line operating subsidy by the proponent to the MBTA to mitigate impacts of capacity exceedance. In addition, the Proponent has proposed an additional subsidy for the purpose of promoting train ridership in the evening and late night

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	hours as part of the pursuit of aggressive mode distribution (see Section 2.3.2, page 2-26).
EOEEA-28	Comment: In addition to other issues identified above, MassDOT has requested the SSFEIR to establish a process for integrating the City's long-term plans for Sullivan Square and Rutherford Avenue and the impacts of casino-related traffic. It will require participation by the City, the Proponent, the MGC and MassDOT. I strongly support MassDOT's interest in consulting with the parties to address concerns with the mitigation and identify opportunities to understand and reconcile potential conflicts between State and municipal guidance regarding mitigation. The success of this effort will be dependent on the active and constructive participation by all the participants. I expect that all of the parties will participate in good faith; however, building consensus with parties engaged in active litigation will be a significant challenge beyond my control. Response: Please see Section 3.2.1, page 3-1.
EOEEA-29	Comment: Based on a review of the comment letters, additional information and clarification of the modeling development and underlying assumptions would address some of the concerns identified by municipalities. In particular, the SSFEIR should identify and clarify how and for what purpose the Synchro and VISIIM models were used. As requested by the City of Boston, it should provide AM peak hour operations data to the City of Boston based on counts performed in December 2014 and it should address questions regarding inaccurate volume networks. Response: In general, VISSIM analysis was used in locations where Synchro analysis is inadequate, particularly complex intersections such as rotaries or where signals are closely spaced. Section 3.3.1, page 3-3, of the SSFEIR contains an explanation as to why a VISSIM model was included, where applicable. Section 3.3.3, page 3-5, of the SSFEIR also includes detailed Synchro for the Sullivan Square area in the a.m. peak hour and corrects inaccuracies on traffic volume graphics.
EOEEA-30	Comment: Lastly, MassDOT and the Proponent should consider the comments from the City of Medford regarding consideration of geometric improvements to address the intersection of Mystic Valley Parkway and I-93 southbound Exit 31 Off-Ramp and concerns that increased traffic could have a compounding effect on the intersections, particularly given the

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	proximity to I-93 southbound mainline; and provide output data from the VISSIM model for Wellington Circle. Response: The Proponent has revised its mitigation plan for Mystic Valley Parkway's (Route 16's) intersections with Harvard Street/Mystic Avenue (Route 38) and with the Route 16 Connector. The Proponent is optimistic that signal phasing changes at the intersection of Mystic Valley Parkway (Route 16)/Harvard Street/Mystic Avenue (Route 38) can improve traffic operations at both intersections. Section 3.4, page 3—10, of the SSFEIR includes the new mitigation plan and updated capacity analysis summary tables.
EOEEA-31	Comment: The SSFEIR should contain revised and updated mitigation commitments. It should identify clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The MassDOT comment letter identified specific tasks the Proponent should complete prior to the permitting process and incorporate into revised draft Section 61 Findings accordingly. In addition, specific commitments associated with the Land Transfer should be incorporated into the Draft Section 61 Findings. Response: Please see Section 61 Findings in Chapter Four.
EOEEA-32	Comment: All of the identified mitigation commitments should be incorporated into the Draft Section 61 Findings for the MGC license to ensure that license accurately reflects the significant commitments to environmental mitigation identified in the MEPA process. Response: Please see Section 61 Findings in Section 4.3.1, page 4-11.
EOEEA-33	Comment: The SSFEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the SSFEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the SSFEIR beyond what has been expressly identified in this certificate. Response: This SSFEIR includes a copy of the Certificate and a copy of each comment letter received. The Certificate and comment letters have

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	been annotated and transcribed into this Chapter 5 insofar as the subject matter contained in the Certificate and Comment letters is within MEPA jurisdiction. In a number of cases, comments have been included and responded to in order to provide clarifications, even when the comment could be considered to be outside of MEPA jurisdiction.
EOEEA-34	Comment: The SFEIR provided uneven responses to comments and, in some cases, included incorrect references to sections of the document. The SSFEIR should provide a specific response to each comment letter received, presenting additional narrative and/or quantitative analysis necessary to respond to the comments received, to the extent that they are within MEPA jurisdiction. If other portions of the document substantively respond to individual comments, the Proponent may reference sections of the SSFEIR; however, such responses must include page and paragraph references to assist the reader in review and should not reference wholesale sections of the document that do not provide a specific response to the comment. I note that in some instances such as reference to the traffic analysis and methodology, a reference to larger sections is appropriate. Response: Where it is appropriate to refer to a section of the SSFEIR, the relevant section(s) or appendices have been identified with corresponding page numbers.
EOEEA-35	Comment: The Proponent should circulate the SFFEIR to those parties who commented on the EENF, and/or the DEIR, and/or the FEIR, to any State Agencies from which the Proponent will seek permits of approvals, and to any parties specified in section 11.16 of the MEPA regulations. To save paper and other resources, the Proponent may circulate copies of the SSFEIR to commenters other than State Agencies in CD-ROM format or post to an online website, although the Proponent should make available a reasonable number of hard copies, to accommodate those without convenient access to a computer to be distributed upon request on a first come, first serve basis. The Proponent should send a letter accompanying the CD-ROM or identifying the web address of the online version of the SFEIR indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. Response: The SSFEIR has been prepared and circulated in accordance with the Certificate and section 1.16 of the MEPA regulations.

Massachusetts Water Resources Authority	
MWRA– 1	Comment: To ensure that the increase in casino flows do not increase sewer overflows to the Mystic River prior to full implementation of the yet to be identified 4:1 I/I reduction plan, MWRA requests that Wynn continue to implement other sewer system improvements, such as the Everett sewer reconnection to Section 193, in addition to and without reducing its 4:1 I/I reduction efforts with the City of Everett. Response: DEP and MWRA have provided funding to the City of Everett to identify potential infiltration and inflow projects which will lead to a reduction in sewer system overflows. Based on discussions with DEP, the Project has committed to provide funding to the City of Everett to implement infiltration and inflow measures to offset Project sewage flows on a 4 to 1 ratio. MassDEP has committed to monitoring the progress of this I/I work.
MWRA– 2	Comment: As stated in earlier comments, once the hotel is completed, and if the Proponent intends to operate a laundry facility on the premises, an MWRA Sewer Use Discharge Permit will be required for the discharge of laundry effluent into the sanitary sewer system. Response: At this time, the Project does not intend to have an on-site laundry facility. If this should change, the Project would obtain a sewer discharge permit from the MWRA.
MWRA– 3	Comment: The installation of the proposed gas/oil separator(s) will require MWRA approval and may not be back filled until inspected and approved by the MWRA and Local Plumbing Inspector. Response: The Project will comply with MWRA standards and procedures for gas/oil separators in the parking garage.

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MAPC – 1	Comment: MAPC is very concerned that these critical components of the off-site employee parking program have not been provided as part of the MEPA review process. The details of the off-site parking program should be resolved in the subsequent permitting and design phase with the municipalities and any measures required to mitigate impacts at the three

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	sites should be included in the Secretary's Section 61 Findings. Response: The Proponent is working on the lease arrangements for the off-site parking facilities that will be used for employee parking, the details of which will be included as a part of the local approval process for the Project. No additional mitigation beyond that identified in the draft MassDOT Section 61 Finding is anticipated to be required to accommodate the off-site parking for employees as the employee trips associated with the use of the identified parking facilities is reflected in the traffic analyses that have been prepared in support of the Project.
MAPC – 2	Comment: On page 2-86, the SFEIR claims that off-site employee parking will be "sufficient to accommodate the projected employee parking demand of 365 spaces." However, on page 2-75, there is a contradictory statement cautioning that "overlapping employee shifts required to ensure that positions are appropriately staffed may result in parking demands that could be approximately twice that of the projected peak parking demand." The Proponent needs to provide further analysis regarding congestion and capacity issues that could result with employee shift changes at each of the three off-site parking locations. Response: The peak parking demand for employees was projected to be approximately 365 spaces. As a conservative estimate and accounting for the potential need for overlapping employee shifts to ensure that positions are properly staffed, it was stated that the employee parking demand could be twice the calculated value (365 spaces) to accommodate such overlaps. If this were to occur, a total of 730 parking spaces would be required which is still less than the 800 parking spaces (minimum) that are being retained to accommodate employee parking.
MAPC – 3	Comment: While the proposed parking in Everett will most likely be new parking, the sites in Medford and Malden are in existing and well-utilized facilities. Do these facilities have available capacity for the Proponent's planned use while still serving current parking patrons? Will any current users be displaced, and if so, where will they relocate? Any such displacement should be mitigated by the Proponent. Response: The Proponent is in the process of securing parking at existing facilities in Medford and Malden that will utilize identified available parking capacity and will not displace existing parking demand.

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MAPC – 4	Comment: The traffic impacts and parking demands of the off-site parking program should be determined by on-site monitoring at all three locations, not by simply administering surveys as the Proponent currently proposes. Response: As a part of the Transportation Monitoring and Reporting Program, the Proponent will monitor boarding and alighting information for the employee shuttle bus which will include a measure of employee parking at each of the off-site parking facilities as employees will be asked to identify the parking facility where they parked their vehicle. Each employee will be assigned to parking at a specific parking facility based on the origin of their trip and the number of spaces available within each facility.
MAPC – 5	Comment: An estimated 40 private charter busses will access the project site daily. While the SFEIR mentions that private charter buses will pick-up and drop-off riders at the project site, where will they be staged? Response: Charter buses will be allowed to stage in the same location as employee parking in the Lower Broadway neighborhood in Everett or a nearby location to be identified prior to opening.
MAPC – 6	Comment: If a PPR service is implemented, then leases with Massport should be short-term and give priority to accommodate airport patrons, should that demand increase. In addition, the PPR service should be evaluated by on-site monitoring. Response: In the Proponent's discussions with Massport, Massport has made it clear that airport passenger capacity is their highest priority and essential to the continued success of the Logan Express program. Any leases with Massport will inevitably reflect this reality. The success of the PPR service will be part of the overall transportation monitoring system and measured in various ways overtime to ensure useful metrics are available.
MAPC – 7	Comment: To off-set potential impacts, the Proponent should partner with the MBTA by contributing to both the operating and maintenance costs of area bus service and the Orange Line in an amount that is reasonably related to the project's additional demand and its impact on MBTA services. Specific thresholds should be determined collaboratively between the MBTA and the Proponent.

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	Response: The Proponent has worked with MassDOT and the MBTA to develop a methodology for calculation of an operating subsidy for the Orange Line. The Proponent has committed to providing an operating subsidy for the Orange Line. The methodology and amounts of which are described in more detail in Section 2.3, pages 2-24 through 2-27. The subsidy is codified in the Section 61 finding for the MassDOT Rail and Transit Division, Section 4.3.3, pages 4-37 through 4-40. In addition, the Proponent has proposed an additional subsidy for the purpose of promoting train ridership in the evening and late night hours as part of the pursuit of aggressive mode distribution (see Section 2.3.2, page 2-26).
MAPC – 8	Comment: It is also worth mentioning that the SFEIR notes the revised analysis of Orange Line peak loads for weekday and weekend service between Wellington and Back Bay as outlined in MassDOT's FEIR comment letter is unresolved (Table 1.3 MassDOT Coordination Summary, page 1-20). This issues needs to be addressed by the Proponent in concert with MassDOT and the MBTA. Response: The peak load analysis is provided in Section 2.2.2, page 2-4, of the SSFEIR. The Proponent has consulted extensively with MassDOT and the MBTA and this analysis reflects their input.
MAPC – 9	Comment: As stated earlier, in addition to the on-site data collection proposed in the DFEIR, the transportation monitoring plan needs to include monitoring of the three off-site parking locations to ensure that they are working effectively. If not, the Proponent will need to implement adjustments to the off-site parking program. Furthermore, as indicated above, the PPR program should also include data collection and monitoring if it is implemented. Response: As a part of the Transportation Monitoring and Reporting Program, the Proponent will monitor boarding and alighting information for the employee shuttle bus which will include a measure of employee parking at each of the off-site parking facilities. Employees will be asked to identify the parking facility where they parked their vehicle. Each employee will be assigned to parking at a specific parking facility based on the origin of their trip and the number of spaces available within each facility. If the parking demand at a particular facility is determined to exceed the number of parking spaces that are allocated for employee parking, either additional available parking will be attained for use by employees or the assignment of parking between the facilities will be

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	adjusted.
MAPC – 10	Comment: Specifically, these [Route 99 Bus Service] improvements include collaborating with the MBTA to ensure bus arrival and departure times are synchronized with employee shift changes, enhanced bus shelters (e.g., with real-time message boards), signal priority for buses, dedicated bus lanes, and other "bus rapid transit" (BRT) features. Enhancing the Route 99 corridor for bus service will encourage patrons and employees accessing the project site to use this mode of transportation. MAPC expects that further investigation of bus service will be addressed as the Proponent continues to collaborate with the City of Everett, MassDOT and the MBTA as the design of Route 99 advances, and we urge the Secretary so to require in his Certificate. Response: The Proponent's mitigation includes signal timing optimization and phasing as part of Broadway/Alford Street (Route 99) mitigation package, as well as signal priority for buses. The Proponent will continue to coordinate with the City of Everett, MassDOT, and the MBTA regarding improvements for bus service. Refer to Draft Section 61 findings in Chapter 4 of this SSFEIR.
MAPC – 11	Comment: The City of Boston's multi-year effort to create a "new neighborhood" in the City is highly consistent with the Commonwealth's Sustainable Development Principles, the regional plan MetroFuture, as well as MassDOT mode-shift goals and Green DOT programs. This vision will likely be compromised by the proposed project's increase in vehicular traffic. It is imperative that this area be closely monitored post-development, and that every effort is made to minimize and mitigate negative impacts that endanger the City's plan for the neighborhood. Response: Travel mode share evaluations are summarized in the SFEIR, Chapter 2, Table 2-7, and are consistent with MassDOT/Green DOT mode shift goals, and the Metrofuture Regional Plan. MassDOT has approved the underlying methodology and the use of the travel mode shares contained therein. The mode share analysis indicates that 29% of casino patrons and 59% of casino employees are projected to arrive via a non-SOV mode. As part of its Gaming License, the Proponent has agreed to an annual payment of $20,000 per additional vehicle entering and leaving the project using Sullivan Square during the Friday p.m. peak period. Payments will made for vehicles trips in excess of the number of vehicle trips entering

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	and leaving the project using Sullivan Square during the Friday p.m. peak period, as outlined in a methodology and data used by the City of Boston as the basis for the issuance of any required permits necessary for the Proponent's Sullivan Square mitigation plan. The Proponent has committed to an extensive monitoring program for both traffic and transit. The monitoring program commitment is included in the Section 61 findings, Chapter 4, Section 4.3.1, pages 4-11 through 4-27.
MAPC – 12	Comment: To improve non-motorized access between the site and points north, the Proponent should work with the MBTA to extend the Bike-to-the-Sea trail along the MBTA right-of-way beneath Revere Beach Parkway to the project site. This link will provide a safe car-free alternative to the Project site. Response: The Proponent agrees that an extension of the Northern Strand Community Trail to the Mystic River would be extremely beneficial to the Project and its neighbors and surrounding communities. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the Northern Strand Community Trail. The City of Everett is optimistic that a feasible plan to extend the Northern Strand Community Trail will be identified once field survey is completed, and that the design process can proceed before the Project opens. The Proponent will support the stakeholders' efforts to petition for funding through the Community Mitigation Fund.
MAPC – 13	Comment: Although the SFEIR states that parking pricing strategies will be summarized in an annual report that will be provided to MassDOT and the Massachusetts Gaming Commission, the report should propose adoption of new pricing strategies, if necessary. Response: Should the parking demand observations that are to be completed in conjunction with the Transportation Monitoring Program indicate the need to implement traffic and parking demand management strategies, pricing structures for parking and expansion of the elements of the TDM program will be a part of the management strategies that will be considered for the Project.

Coastal Zone Management	
CZM – 1	Comment: As presented in the SFEIR, the project design modifications are consistent with the MHP Decision. Conformance of the proposed project with the approval language and conditions of the MHP Decision will be confirmed by MassDEP in the Chapter 91 licensing process. Response: The Proponent plans to submit a Chapter 91 License Application to MassDEP and anticipates that the Chapter 91 Licensing process will confirm the conformance of the Project with the MHP.
CZM – 2	Comment: The proposed project may be subject to CZM federal consistency review. Response: The Proponent acknowledges the requirement for CZM Consistency Review and will submit an application for this review during the course of the permitting process.

Department of Conservation and Recreation	
DCR – 1	Comment: DCR recommends that the Proponent develop a separate timing plan based on actual weekend (holiday season) traffic counts. This topic could be addressed when a DCR Construction and Access Permit is issued for the Project. Response: The Proponent will work with DCR during the preparation and review of the DCR Construction and Access Permit to develop the appropriate signal timing and phasing plans for the various times of day, including weekend time periods.
DCR – 2	Comment: DCR notes traffic congestion and documented accident history are associated with these simultaneous left turning movements [at the intersection of Revere Beach Parkway/Garfield Avenue/Webster Avenue], and a solution should be explored further when the Proponent submits its Construction and Access Permit. Response: The Proponent will work with DCR to develop a solution that is acceptable to DCR at the intersection of Revere Beach Parkway (Route 16)/Garfield Avenue/Webster Avenue during the preparation and review of the DCR Construction and Access Permit for that location.

Department of Environmental Protection	
DEP – 1	Comment: The City is currently in the process of implemented an I/I investigation program, which is expected to yield specific projects to rehabilitate existing infrastructure and remove I/I from the City's sewer system. The SFEIR asserts that Wynn MA LLC will provide funding which will be reserved by the City for specific I/I removal projects that will be identified in the City's I/I investigations. MassDEP will continue to monitor the progress of the I/I abatement program in Everett, and the funding commitment of the Wynn project to fulfill the requirements for 4:1 removal for this project. Response: The Proponent will continue to work with the City of Everett and DEP to provide funding and assistance as needed to facilitate the realization of 4:1 removal for the Project.
DEP – 2	Comment: MassDEP strongly encourages further consideration of opportunities to improve shellfish resources at more appropriate locations in consultation with DMF. Response: The Project has responded to DMF concerns regarding proposed shellfish bed restoration at the Project Site and will focus on marine resource improvements through onsite salt marsh habitat creation and sediment remediation.
DEP – 3	Comment: MassDEP looks forward to meeting with the proponent to ensure that the salt marsh restoration plan is implemented successfully and the living shoreline retains essential functions, which will require an erosion and habitat protection strategy that takes into account climate change. Response: The Proponent looks forward to working with DEP to achieve a successful salt marsh and coastal bank restoration project and welcomes DEP's input. The Proponent has provided Notice of Intent plans for the restoration work to DEP NERO in advance of filing for review and comment.
DEP – 4	Comment: In the absence of additional information in the SFEIR, the proponent is reminded that an erosion resistant design of the stormwater outfalls is required for the maximum stormwater discharge velocity, in accordance with the Stormwater Management Handbooks, Volume 3, Chapter 1, page 2. The Stormwater Management Standard 1 also is clear

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	that new stormwater outfalls may not cause erosion of wetlands or waters of the Commonwealth. As previously mentioned in MassDEP's FEIR comments, the plans of the rip rap energy dissipation and tidegate designs (figure 7-3B) did not clarify whether wetland resources would be impacted. The rip-rap splash pads proposed may not be sited within most coastal wetland resources, except for land subject to coastal storm flowage or riverfront area, in accordance with the wetland regulations at 310 CMR 10.05(6)(k). Response: In response to this comment, the Project stormwater outfall design has been modified to minimize the impacts of stormwater discharge velocity by relocating the outfalls to an area outside of the coastal beach resource area and into an area of land under ocean. Detailed design plans have been provided to MassDEP for review and comment.
DEP – 5	Comment: This suggests that additional traffic mitigation may be offsetting the increase in traffic volume corresponding with the refinements to the project. Accordingly, avoiding an increase in stationary source emissions, and maintaining or reducing the emissions estimated in the FEIR appears to be a reasonable goal going forward with the project design. To that end, the proponent is encouraged to consider additional improvements in the energy efficient designs and expansion of the commitment to renewable energy. Response: The comment includes an incorrect assumption that stationary source emissions increased from the FEIR to SFEIR. The CO_2 emissions and emission reduction percentages, in the FEIR and SFEIR cannot be compared because the two documents used different Base Case energy codes, as required by the Secretary of Environmental Affairs (see page 26, second paragraph of the Certificate on the SFEIR dated April 3, 2015). Since additional energy mitigation was adopted by the Project after the FEIR was filed (see page 2 of the GHG report included in the SFEIR), stationary source emissions stated in the SFEIR are less than those presented in the FEIR, i.e., the Project has already adopted "additional improvements to the energy efficient design."
DEP – 6	Comment: There also is no comparison of the change in plug load energy use between the Mitigation Case in the FEIR and the Mitigation Case in the SFEIR. This information would provide an understanding of the change in energy use due to the additional EGMs. To the extent is it feasible, a net increase in EGM energy use for EGMs from that reported in the FEIR

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	should be avoided. In addition, it is requested that the Section 61 Finding in the SFEIR address this issue directly. A revised Section 61 Finding should specify how many EGMs will be low-energy and the EGM total. It also would be useful to provide comparable information on EGM use, as was available in the Section 61 Finding for the cogeneration plant, such as clarification of the energy savings expected with the low-energy EGM to be used. Response: The GHG report in the SFEIR (Appendix C) states that 80% of Electronic Gaming Machines (EGMs) will be low-energy design (page 25). Whereas the total number of gaming positions increased by 10% from the FEIR to the SFEIR, the assumed number of EGMs increased from 3,200 (FEIR) to approximately 3,500 (SFEIR), and the assumed number of low-energy EGMs in the SFEIR is 80% of 3,500 or 2,800. In a casino, no one EGM is used 24/7 and there are times in the day when only a fraction of EGMs are in use, and at those times the machines draw less electricity. The GHG analysis employed a very conservative assumption for electrical load (plug load): each EGM would be used continuously, 8,760 hours per year. The energy-use envelope of that assumption covers any modest variations in the total number of EGMs that are actually installed at the casino, e.g., the 10% variance in assumed number of EGMS between the FEIR and the SFEIR. The reduction in plug load from 3.44 W/SF for the Base Case to 2.17 W/SF for the Mitigation Case (Table 7 in the GHG report, Appendix C of the SFEIR) is due solely to the use of low-energy EGMs. As requested by DEP, the Chapter 61 Finding in this SSFEIR states that at least 80% of EGMs will be low-energy design. The GHG report in the SFEIR (Appendix C, page 25) states that low-energy EGMs are expected to reduce electricity use by 1,400 MWhr/year, though it should be noted this is a high estimate assuming continual machine use. Due to the uncertainty regarding actual EGM use over an annual period, an accurate estimate of actual electrical use reduction attributable to low-energy EGMs is difficult to determine. The Section 61 Finding has been changed to read: "Low-Energy Electronic Gaming Machines (EGMs) will be installed for at least 80% of all EGMs and will be capable of reducing electrical use by up to 1,400 MWhr/year assuming continuous machine use."
DEP – 7	Comment: Additional details in the Section 61 Finding on the commitments to renewable energy also should be included, such as quantification of the 30 percent commitment, including a cogeneration plant (20 percent), and a Green Power purchase (seven percent). It is noted

Department of Environmental Protection	
	that the commitment to Green Power purchase was not in the Section 61 Findings (page 3-43). Response: The Section 61 Finding on commitments to renewable energy is very clearly stated in the SFEIR (page 3-43) and the comment misquotes the text from the SFEIR. The Section 61 Finding states that the cogeneration plant will provide approximately 20% of the Project's annual electrical consumption, and the PV system plus the purchase of Green Power will provide 10% of the Project's annual electrical consumption. (Rooftop solar alone will not provide 10%). Until the cogeneration plant and PV system are designed, the actual percentages cannot be stated with greater precision. To the extent the PV system provides more or less than 3% of annual electrical consumption, the Green Power purchase will be adjusted to ensure the sum of the two equals 10% of annual electrical consumption. The commitment to Green Power purchase is stated in the SSFEIR Section 61 Finding, Section 4.3.6, pages 4-45 through 4-53.
DEP – 8	Comment: Finally, the TMP includes additional bicycle parking as a possible element, but MassDEP notes that an impediment to bicycle commuter travel may be the lack of protected bicycle lanes on major routes serving the project site. Accordingly, MassDEP recommends a much greater emphasis by the proponent to improve the safety of bicycle access to the Project site and to off-site parking facilities. Response: In order to facilitate bicycle access to the Project Site, the Proponent is supportive of the City of Everett in exploring an extension of the Northern Strand Community Trail ("NSCT") to the Project Site. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens. The connection of the NSCT to the Project Site would provide bicycle commuters a separated, off-street option that would connect the Project Site to locations close to parking areas at Wellington Station and in Malden. Bicycle commuters will likely be able to ride on a network of relatively low-stress neighborhood streets between the parking lot and the Project Site.

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	Broadway/Alford Street (Route 99) currently has on-street bike lanes. These lanes will be maintained as set forth in the Proponent's mitigation plan.
DEP – 9	Comment: MassDEP recommends that the Secretary require the Proponent to meet with the MassDEP as soon as practicable to have a technical discussion about all potential emergency generators, boilers, fuel-burning equipment and the 1-MW micro-turbine cogeneration plant. Response: The Proponent has made a commitment to meet with DEP to discuss the applicable regulations for fuel-burning equipment (the cogeneration plant, boilers, emergency generators) as soon as detailed designs are available. The Proponent is aware of the air permitting regulations as set forth in 310 CMR 7.02 and the requirements of the ERP program as set forth in 310 CMR 7.26.
DEP – 10	Comment: The project proponent is advised that the construction of the service road and shared entrance must comply with all applicable requirements of Massachusetts General Law, Chapter 21E and the Massachusetts Contingency Plan. Response: The construction of the service road will comply with all applicable state and federal laws, including MGL Chapter 21E and the MCP.

Division of Marine Fisheries	
DMF – 1	Comment: We continue to recommend that all dredging occur outside of the fisheries time of year restriction from February 15 to September 30 of any year for the protection of diadromous fish, winter flounder and shellfish critical life stages. Response: Project dredging activities will occur outside of the fisheries time of year restriction from February 15 to September 30 of any year for the protection of diadromous fish, winter flounder, and shellfish critical life stages.
DMF – 2	Comment: The proposed 7,720 ft. of intertidal dredging will result in loss of habitat that may require mitigation, such as an in lieu fee, by State and Federal resource agencies. Construction of the bulkhead and walkway will result in 10,470 ft. of impact to coastal beach and tidal flat that may also

Division of Marine Fisheries	
	necessitate mitigation. Response: The Proponent looks forward to working with DMF and other reviewing agencies to determine the appropriate mitigation for project impacts. The Project does include substantial on-site environmental mitigation to offset Project impacts.
DMF – 3	Comment: Development plans should maintain public fishing access to these existing areas. Response: The Project will create public access to the entire Project shoreline and will create safe and improved public access to adjacent parcels of land which may support recreational fishing.
DMF – 4	Comment: We recommend the use of coir rolls rather than a riprap sill seaward of the marsh plantings where possible to minimize erosion. Response: Project designs for the salt marsh plantings have incorporated coir rolls.

Massachusetts Department of Transportation	
MassDOT – 1	Comment: The proposed interim mitigation for the Rutherford Avenue corridor consists primarily of traffic signal modifications at the Route 1 ramps, minor geometric improvements at Spice Street, and geometric improvements at Maffa Way. Although the information provided indicates that the corridor is expected to operate at acceptable LOS and delay, and operations on I-93 would not be significantly impacted under existing conditions, a clear determination by the City of Boston as to their final plan for the corridor and a schedule for implementation could help to determine any additional mitigation for the corridor. Response: The latest information regarding the long-term plan for the Rutherford Avenue corridor dates from 2012 and is available on the City of Boston's website. The City of Boston has not provided the Proponent with any additional information. The Proponent analyzed the alternative that was shown in the 2012 (latest) information on the City of Boston's website in its DEIR.
MassDOT – 2	Comment: With the proposed mitigation [at Sullivan Square] in place, the

Massachusetts Department of Transportation	
	SFEIR analysis demonstrates that traffic operations would operate with acceptable LOS and delay, but there are still questions on whether queuing could be accommodated due to the proximity of the intersections within the area and the limited availability of vehicle storage. Response: Both VISSIM and Synchro analysis for the Sullivan Square signal systems were calibrated to existing conditions using queue observations. The VISSIM analysis indicates that the average queue lengths on Cambridge Street are not longer than the available queue storage, and the Synchro results indicate that the average queue lengths are approximately the same as the available storage. However, neither method can account for adaptive signal control, which the City of Boston requested be installed with these new signals.
MassDOT – 3	Comment: According to the Proponent, the City of Boston provided inputs and requested revisions that were included in the final mitigation plan. However, the City has yet to make a determination as to the compatibility of these improvements with their long-term plan for Sullivan Square. The City's long-term vision of Sullivan Square is for a low traffic, pedestrian friendly, village-type neighborhood with improved access to the MBTA station, and bicycle and pedestrian connectivity with the rest of Charlestown. MassDOT remains concerned that the City's vision and the Proponent's plans are not appropriately aligned. Therefore, the Proponent should continue to work with MassDOT and the City to assess additional access alternatives to try to minimize traffic impacts to Sullivan Square while providing a connection to Route 99 for casino-related traffic. Response: As part of its application for a gaming license, the Proponent engaged RKG Associates, economic, planning and real estate consultants, to prepare a study on the impact of the Project on neighboring communities. A portion of this study was focused on the impact of the Project on employment and wages in the City of Everett and the neighboring communities of Malden, Medford, Somerville, Chelsea, Revere and Boston. The study concluded that the Project will have significant positive impacts on employment and wages in these communities. In addition, the Gaming Commission has undertaken a comprehensive study of the impacts of the Project (and those of other licensees) to the region and Commonwealth.
MassDOT – 4	Comment: The Secretary's Certificate requiring the SFEIR, strongly encouraged the Proponent to consult jointly with MassDOT and the City of

Massachusetts Department of Transportation	
	Boston regarding the project's impacts on Rutherford Avenue and Sullivan Square, the interim mitigation plans for the corridor, and long term plans for the area. While the Proponent consulted with MassDOT and the City individually on these issues, no joint meeting occurred. We would, therefore, request that the Secretary require the preparation of a Supplemental SFEIR for the purpose of allowing the City, the Proponent, the Gaming Commission and MassDOT to establish a process for the development of the long term improvements for the Rutherford Avenue corridor consistent with the schedule outlined in the Gaming License. Response: Please see Section 3.2.1, page 3-1.
MassDOT – 5	Comment: The capacity analysis included in the SFEIR indicates that most of the intersections and weaving movements are expected to operate with acceptable LOS and delay. Full accommodations are provided for bicyclists and pedestrians as part of these improvements. The Proponent should work with MassDOT to refine the design [of Santilli Circle], improve lane utilization, and optimize guide signage location to ensure that casino patrons, a number of which will be unfamiliar with the area, will be able to safely and efficiently maneuver through the rotary. Response: The Proponent will work with MassDOT and the City of Everett to refine the design of Santilli Circle, improve lane utilization, and optimize guide signage and pavement markings.
MassDOT – 6	Comment: The SFEIR provides updated information on how the Proponent's proposed shuttle schedule would align with the Orange Line schedule at Wellington Station, the capacity of the shuttle system to accommodate both patrons and employees, and the frequency of service to make it a viable alternative for employees and patrons. As part of this effort, the Proponent will redesign the existing parking lot at Wellington Station to provide new berthing spaces for the casino shuttle system, improve circulation of the existing parking lot, and relocate the layover spaces for MBTA buses. The Proponent should continue to coordinate with MassDOT and the MBTA during the approval process to implement these improvements. Response: The Proponent will continue to coordinate with MassDOT and the MBTA to implement the proposed improvements at Wellington Station.
MassDOT – 7	Comment: The SFEIR includes a revised analysis of projected Orange Line

Massachusetts Department of Transportation	
	peak loads for weekday and weekend service days between Wellington and Back Bay stations. In our comment on the FEIR, MassDOT requested that the Proponent consider providing financial support for increased Orange Line service for any violation of the MBTA's existing service standards. In response, the Secretary's Certificate requiring the filing of the SFEIR specifically required the Proponent to consult with the MBTA and MassDOT about providing support for increased Orange Line service as part of the mitigation of the project's impacts. Although some discussions occurred during the preparation of the SFEIR, the Proponent has opted not to commit to providing an operating subsidy for the Orange Line. We therefore, request that the Proponent be required to file a Supplemental FEIR documenting casino-related Orange Line impacts, MassDOT's proposed methodology for assessing an operating subsidy as mitigation for those impacts, and the Proponent's response and reasons for its position. Response: Section 2.3 of this SSFEIR (pages 2-24 through 2-27) describes the methodology and amounts of a proposed operating subsidy to mitigate impacts to Orange Line service. The methodology and the amount are the results of extensive coordination among the Proponent, MassDOT, and the MBTA.
MassDOT – 8	Comment: MassDOT has discussed this issue with the Proponent and the Proponent has agreed to place the property in escrow until a Secretary's Certificate of Adequacy is issued on the Wynn Casino and sixty days has elapsed since the publication in the Environmental Monitor of the final MEPA filing on the project. MassDOT appreciated the Proponent's willingness to help cure this issue. MassDOT believes that the public should be given the right to understand and comment on the transaction and our decision to transfer the property in question. We, therefore, request that the EOEA require the preparation of a Supplemental SFEIR for the purpose of documenting the resolution of the issue raised in prior comments on the FEIR and the MBTA's decision to transfer the property to the Proponent, and taking public comment thereon. Response: As set forth in Section 1.3.6, page 1-11, on April 15, 2015, Proponent and the Wynn Parties entered into the Escrow Agreement. Pursuant to the terms of the Escrow Agreement, Wynn executed a Quitclaim Deed to convey the property that is subject to the Deed back to the MBTA. In addition, the Wynn Parties and the MBTA executed an agreement terminating the Easement Agreement (a copy of the Termination of Easement Agreement is attached hereto as Appendix B). Finally, the

Massachusetts Department of Transportation	
	MBTA has placed Six Million Dollars ($6,000,000), the full amount of the purchase price paid by Proponent, into escrow. The escrow agreement provides, in pertinent part, that the conveyance of the property shall be deemed to have not taken place unless and until the Secretary of Energy and Environmental Affairs has determined that, for the Project that includes work or activities on the MBTA Everett Shops property: (1) no Environmental Impact Report is required; or (2) a single or final Environmental Impact Report is adequate and sixty (60) days have elapsed following publication of notice of the availability of the single or final Environmental Impact Report in the Environmental Monitor in accordance with 301 CMR 11.15(2), provided that the MBTA shall reconsider and confirm or modify the conveyance of the property pursuant to the Deed and any conditions following MEPA review. Pursuant to the terms of the Escrow Agreement, in the event the MBTA determines that the transaction requires no modifications or conditions or other mitigation, the escrow agent will return the Quitclaim Deed and Termination of Easement Agreement to the Proponent and the money to the MBTA. In the event the MBTA determines that the transaction requires modifications or conditions or other mitigation, the parties are obligated to work in good faith to document such required modifications, conditions or mitigation commitments after which the escrow agreement will return the Quitclaim Deed and Termination of Easement Agreement to Proponent and the money to the MBTA and record any such modifications. In the event that the parties cannot agree to any required modifications, conditions or other mitigation, the escrow agreement will file the Quitclaim Deed and Termination of Easement Agreement and return the money to Proponent.
MassDOT – 9	Comment: Similar to the pedestrian improvements, the Proponent has committed to provide bicycle facilities at impacted highway locations. Bicycle lanes are proposed along the Route 99 corridor, and as part of the SFEIR they were upgraded to address concerns raised by MassDOT. The Proponent should continue to work with the City of Everett to seek an alternative to connect bicycle lanes on Route 99, north of Route 16. Further, the Proponent has noted that based on the latest discussions with the City of Everett, the Rail Trail project, which would improve bicycle connections along Route 99, is expected to be constructed in the near future.

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	Response: The Proponent will continue to work with the City of Everett to seek an alternative to connect bike lanes on Route 99 north of Route 16. In order to improve bicycle access to the Project Site, the Proponent is supportive of the City of Everett in exploring an extension of the NSCT to the Project Site. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens. The connection of the NSCT to the Project Site would provide bicycle commuters a separated, off-street option that would connect the Project Site to locations close to parking areas at Wellington Station and in Malden. The Everett employee parking area is likely to be located east of Route 99 and south of Route 16. Bicycle commuters will likely be able to ride on a network of relatively low-stress neighborhood streets between the parking lot and the Project Site. Broadway/Alford Street (Route 99) currently has on-street bike lanes. These lanes will be maintained in the Proponent's mitigation plan.
MassDOT – 10	Comment: The Proponent has indicated that a revenue control system will be installed in the underground parking garage and pricing strategies would be implemented to manage parking. This would help reduce single-occupancy vehicle trips and encourage the use of alternative transportation modes. The Proponent should commit to monitor the effectiveness of the pricing strategies and adjust prices as needed to meet the goals of site trip reduction and efficient site access and circulation. Response: The Proponent will monitor the effectiveness of the parking pricing strategies and adjust prices as needed to meet the goals of Project Site trip reduction and efficient site access and circulation.

Massachusetts Port Authority	
Massport – 1	Comment: The proponent will need to file a 7460 with the Federal Aviation Administration (FAA) for both the building(s) and temporary

Massachusetts Port Authority	
	construction crane(s). Response: The Project will make the required filings with the FAA when the detailed designs needed for such filings are available.
Massport – 2	Comment: We also encourage the project team to review FAA's Technical Guidance for Evaluating Selected Solar Technologies on Airports (Nov. 2010) as they move to finalize building design. Response: The project team will review the applicable portions of the FAA Technical Guidance for Evaluating Selected Solar Technologies on Airports prior to finalizing the location and arrangement of PV panels on the buildings.
Massport – 3	Comment: Consequently, we reiterate our suggestion that well in advance of opening the proponent undertake a comprehensive analysis of the impacts associated with the creation of the estimated 4,000 permanent new jobs and 4,000 construction jobs. Response: As part of its application for a gaming license, the Proponent engaged RKG Associates, economic, planning and real estate consultants, to prepare a study on the impact of the Project on neighboring communities. A portion of this study was focused on the impact of the Project on employment and wages in the City of Everett and the neighboring communities of Malden, Medford, Somerville, Chelsea, Revere and Boston. The study concluded that the Project will have significant positive impacts on employment and wages in these communities. In addition, the Gaming Commission has undertaken a comprehensive study of the impacts of the Project (and those of other licensees) to the region and Commonwealth.
Massport – 4	Comment: We recommend a job training program that addresses any issues identified in the analysis. Response: As set forth above, the Gaming Commission has undertaken a comprehensive study of the impacts of the Project (and those of other licensees) to the region and Commonwealth. The Proponent will implement any required mitigation as determined by the Gaming Commission.

Massachusetts Department of Energy Resources	
DOER– 1	Comment: The proponent appears to be using R-30 roof insulation in both the baseline and the proposed models, for both the hotel and the podium. This contrasts with the R-25 noted in the Greenhouse Gas report. If R-30 is indeed being used in the model to demonstrate requisite EUI reduction, then it is recommended the R-30 be used on the project. Response: Both the Base Case and Mitigation Case eQUEST energy model runs for the hotel and podium buildings used R25 roof insulation, equal to the current Building Code (IECC 2012). Screen1 and Screen2 in the document entitled eQUEST Model Input are Screen Prints from the eQUEST model input files used to generate the eQUEST model output provided in the GHG report for the SFEIR. The GHG analysis did not assume R30 roof insulation. See Appendix C.
DOER– 2	Comment: It appears that an approximately 70% efficient water heater was used (energy input ratio EIR = 1.37) in the baseline model for the hotel, which is less than required by Appendix G. This will likely result in overestimating the energy consumption of the base case and thus potentially overestimating the estimated EUI reduction. Response: The Base Case eQUEST energy model run for the hotel used the eQUEST default thermal efficiency of 80% for hot water heating. Screen3 in the document entitled eQUEST Model Input is a Screen Print from the eQUEST model input file used to generate the eQUEST model output provided in the GHG report for the SFEIR. The GHG analysis did not assume 70% thermal efficiency for hot water heating. See Appendix C.
DOER– 3	Comment: Variable speed drives were used for some equipment in the model, yet variable speed drives are not fully committed to by the proponent. If variable speed drives are used to demonstrate EUI reductions, then that improvement should become an articulated commitment. Response: The eQUEST model run for the hotel assumed constant speed drives for HVAC equipment, not variable speed drives. Screen4 and Screen5 in the document entitled eQUEST Model Input are Screen Prints from the eQUEST model input files used to generate the eQUEST model output provided in the GHG report for the SFEIR. The GHG analysis did not assume variable speed drives. See Appendix C.
DOER– 4	Comment: Output results for the Podium indicate many unmet load hours (up to >1100) in numerous zones, indicating equipment is undersized.

Massachusetts Department of Energy Resources	
	Undersized equipment can potentially lead to under-predicting energy consumption. Having more than 300 hours unmet does not conform to Appendix G; this issue requires resolution in self certification. Response: Some zones in the eQUEST modeling of the building have unmet hours for space heating. This is due to slightly under-sized boilers that were auto-sized by the eQUEST software (not specified by the user). Actual HVAC equipment are yet to be designed and will be sized properly, taking into account the heating demand that will be served by waste heat from the cogeneration plant. This issue will be addressed in any energy modeling required as part of the Project's self-certification.
DOER– 5	Comment: No windows are shown on two sides of the podium. Total window area for the podium is approximately 19%. It's important that the model performed to support self-certification reflect eventually-designed window areas and placement. Response: Casinos typically have very few windows, and thus the assumption in the eQUEST model run for the podium building that windows occur on only two of four sides is reasonable. See Appendix C.

City of Everett Mayor- Carlo DeMaria, Jr.	
Everett – 1	Comment: The City fully supports the proposal to maintain Santilli Circle as an at-grade rotary/intersection provided that: • To the greatest extent feasible, additional improvements are made to accommodate the desired pedestrian routes through and around the rotary, particularly those connecting the Santilli Connector to the Gateway Shopping Center; • It provides improved circulation at the intersection of Santilli Highway and the rotary where volume created by existing development has created inadequate queuing distances and heavy flow volume in the rotary leading to unacceptable backups on Santilli Highway; • The traffic analysis at Santilli Circle should include a Saturday peak

City of Everett Mayor- Carlo DeMaria, Jr.	
	to account for heavy traffic volumes entering and exiting the Gateway Center during these times; and • Proposed Santilli Circle improvements should be coordinated with any widening and re-alignment of Route 16 as part of the Woods Memorial Bridge reconstruction project. Response: The Proponent is working with the City, MassDOT, DCR, and the abutters to refine the proposed design at Santilli Circle. That coordination will continue in the detailed design process. The Proponent will coordinate the construction of the improvements at Santilli Circle with the Woods Memorial Bridge reconstruction, scheduled to begin in Fall 2015.
Everett – 2	Comment: Analysis should be completed for the northern intersection of Bow Street and Broadway, which may be reconfigured to eliminate the merge condition and allow the extension of the bike lane to Sweetser Circle. Response: The Proponent will work with the City of Everett during the design of Broadway (Route 99) to evaluate the northern intersection of Bow Street/Broadway (Route 99), which would allow the northbound bicycle lane to be extended to Sweetser Circle.
Everett – 3	Comment: To the greatest extent possible, the Santilli Connector road cross section should be limited to one 11- foot travel lane in each direction at all locations where projected traffic levels can be accommodated. Response: With the exception of the areas approaching each rotary, the Route 99 Connector will be limited to one 11-foot travel lane in each direction. The Proponent will continue to coordinate with the City of Everett on the design.
Everett – 4	Comment: Remaining shoulder space should be allocated to pedestrian and bicycle uses and/or other traffic calming measures such as protected bike lanes and/or cycle tracks and sidewalks. Response: The Proponent will work with the City of Everett during the design phase for Santilli and Sweetser circles to implement improved bicycle and pedestrian accommodations along the Route 99 Connector.

City of Everett Mayor- Carlo DeMaria, Jr.	
Everett – 5	Comment: The traffic analysis of Sweetser Circle should take into account congestion and delays which occur on Main Street northbound during the afternoon peak which often creates queuing that extends into the circle. Response: The VISSIM model for Sweetser Circle was calibrated to take into consideration queuing around and adjacent to the circle.
Everett – 6	Comment: Traffic signal equipment along lower Broadway should include and utilize technology to optimize transit operations along the corridor. Response: The signal upgrades along the Broadway (Route 99) corridor will include localized bus signal priority for MBTA buses. The Proponent will work with the City of Everett and the MBTA to ensure that transit operations are optimized.
Everett – 7	Comment: Transit stops in the vicinity of the project site should include contextually sensitive enclosed shelters. Response: Proposed mitigation along Broadway (Route 99) includes shelters at transit stops where space is available, typically along the west (southbound) side of the roadway.
Everett – 8	Comment: To the greatest extent possible, pedestrian crossing signals should run concurrently with the corresponding green traffic signals where it is safe to do so and include a leading pedestrian phase. Pedestrian signals should also include countdown timers. Pedestrian signals should activate automatically unless it is necessary to have an exclusive pedestrian phase at a location with minimal pedestrian traffic. Response: Concurrent phasing is provided at the intersection of Dexter Street/Alford Street in Boston. Exclusive pedestrian phases are provided along Lower Broadway at the site driveway, Beacham Street, and Bowdoin Street due to the heavier vehicular turning volumes at those locations. The Proponent will work with the City of Everett to determine whether concurrent crossings could be considered at any of these locations. Concurrent crossings will activate automatically.
Everett – 9	Comment: In areas of Lower Broadway where roadway widening or the removal of parallel parking is proposed, bicycle lanes should include a minimum 1' (preferably 2') striped buffer from the adjacent through travel

City of Everett Mayor- Carlo DeMaria, Jr.	
	lanes. Response: The Proponent will coordinate the design of the bicycle lanes with the City of Everett and incorporate buffered bike lanes where space is available.
Everett – 10	Comment: To the greatest extent possible, "bike boxes" should be included at all intersection legs where a striped bike lane is not provided, including for left turn movements. Response: The Proponent will work with the City of Everett to incorporate bike boxes at signalized intersections where feasible.
Everett –11	Comment: The City supports providing bicycle accommodations throughout the entirety of Sweetser Circle and encourages the proponents to continue the constructive and ongoing working relationship with MassDOT, the City and local bicycle advocacy groups such as Bike to The Sea, Mass Bike, Livable Streets and others to continue the development of improvements to Sweetser Circle. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
Everett – 12	Comment: Traffic calming measures such as raised/textured crosswalks, curb neck downs, etc. should be employed throughout the proposed mitigation, and specifically along Rt. 99/Lower Broadway and on entrance and exit ramps to Sweetser Circle to improve pedestrian safety at crosswalks. Response: The Proponent will coordinate with the City of Everett on the design of Broadway (Route 99) and Sweetser Circle to incorporate traffic calming measures where possible.
Everett – 13	Comment: More detail should be provided showing how the bicycle and pedestrian paths at Santilli Circle will connect with the improved pathways being constructed as part of the Woods Memorial Bridge reconstruction

City of Everett Mayor- Carlo DeMaria, Jr.	
	project. Response: The Proponent will work with the City of Everett, MassDOT, and DCR during the final design process to detail how the bicycle and pedestrian paths will connect to the pathways being constructed as part of the Woods Memorial Bridge reconstruction.
Everett – 14	Comment: The City is currently exploring options to bring bike sharing stations (i.e. Hubway) to Everett and encourages the proponent coordinate with the City to support this initiative. At minimum, one Hubway station should be located at the proponent's site. Response: The Proponent will designate space on the Project Site for a potential Hubway location, should Hubway expand into the City of Everett.

The City of Melrose- Mayor Robert J. Dolan	
Melrose– 1	Comment: I respectfully request that the Commonwealth examine the current proposal being made by Wynn for the redesign of Sweetser Circle (rotary at the intersection of Route 16 and Route 99) to better accommodate cyclists. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
Melrose– 2	Comment: I would also ask your support to extend the Northern Strand Community Trail from its current terminus to the Mystic River. Response: The Proponent agrees that an extension of the NSCT to the Mystic River would be extremely beneficial to the Project as well as its neighbors and surrounding communities. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, the Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the

The City of Melrose- Mayor Robert J. Dolan	
	NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens.

City of Somerville Mayor – Joseph A. Curtatone	
Somerville – 1	Comment: The traffic impacts and their implications on roadway use and construction conflict directly with Somerville's attempts to address public health concerns associated with the heavy use of highways adjacent to residential uses (especially in environmental justice communities), and to foster a walkable and bike-friendly environment that provides a fertile ground for locally-grown businesses, and improve highways aesthetics. Response: The Project shares Somerville's commitments to walkable, bike friendly environments, especially in environmental justice communities. In that regard, the Proponent has been working with the City of Everett, MassDOT, DEP Waterways, DCR, and bicycle advocacy groups to design and construct walkways, bikeways, and roadways to encourage safe pedestrian and bicycle use both off-site and through the Project Site.
Somerville – 2	Comment: We are also concerned that no serious assessment is provided of the effects of the project on Assembly Square generally and Assembly Square Station specifically. Response: Due to the minimal number of trips that will be added on Route 28 in the general area of Assembly Square, transportation analysis was not carried beyond the FEIR stage, during which it was determined that the mitigation performed by the Assembly Row project could accommodate the few additional Project trips. The Proponent is not proposing to connect to Assembly Square Station with its shuttle service; therefore, there is no reason for analysis of Assembly Square station. The Proponent is providing funding for additional study of a pedestrian/bicycle crossing of the Mystic River, which may include access at Assembly Square Station. Analysis of the station may be included in that study. In addition, the Proponent has proposed an additional subsidy for the purpose of promoting train ridership in the evening and late night hours as part of the pursuit of aggressive mode distribution (see Section 2.3.2, page

City of Somerville Mayor – Joseph A. Curtatone	
	2-26 through 2-27).
Somerville – 3	Comment: It appears that the Wynn project has understated its trip generation rate by at least 16 percent and perhaps as much as 76 percent. Response: The trip generation rates and underlying assumptions are summarized in the SFEIR, Chapter 2, Table 2-7, and are consistent with MassDOT/Green DOT mode shift goals, and the Metrofuture Regional Plan. MassDOT has approved the underlying methodology and the use of the travel mode shares contained therein. The mode share analysis indicates that 29% of casino patrons and 59% of casino employees are projected to arrive via a non-SOV mode.
Somerville – 4	Comment: The effect of these trips [at Somerville intersections] is not discussed in the SFEIR. And these effects and the effects at other Somerville intersections will be exacerbated if an appropriate and higher trip generation is used. Response: Based on the trip generation of the SFEIR, which was developed in consultation with and approved by MassDOT as outlined in their comment letter on the SFEIR, the impacts of the Project at Somerville intersections will be minimal. As determined in the FEIR, mitigation was not required at those intersections.
Somerville – 5	Comment: Although Wynn has now been required to use VISSIM software to represent traffic volumes and queues in Sullivan Square, the proponent has not undertaken this type of evaluation as to those Somerville intersections. The result is an incomplete picture of what the Wynn Everett Project means for transportation capacity in and around Somerville roadways in the immediate vicinity of the project site and Sullivan Square. Response: VISSIM modeling was undertaken for Sullivan Square and for Broadway (Route 99) in the vicinity of the Project Site. As a result of prior iterations of analysis prepared during the FEIR, additional analysis of intersections in Somerville was not warranted based on the few trips the Project will add to those roadways.
Somerville – 6	Comment: In addition, some of the mitigation already proposed, such as that at Santilli Circle, is of such a scale and duration that it would ordinarily require a 20-year design horizon rather than the much shorter design horizon used in the SFEIR. Given the large volume of traffic drawn to the Wynn Everett project, such a design horizon should be considered in a

City of Somerville Mayor – Joseph A. Curtatone	
	second SFEIR. Response: The mitigation proposed at Santilli Circle is a surface alternative, not a major reconfiguration into an interchange-style design. MassDOT has determined that the design horizon is appropriate.
Somerville – 7	Comment: Since the Commonwealth has just reached attainment under the National Ambient Air Quality Standards for ozone, the State Implementation Plan for ozone may need to be revisited and revised. Response: The Project is not responsible for addressing modifications to the SIP.
Somerville – 8	Comment: In addition, the Mesoscale Analysis makes no mention of fine particulate matter smaller than 2.5 micrometers or of ultra-fine particulate matter. These pollutants are a growing concern. Response: The Project area is in compliance with the National Ambient Air Quality Standards for the motor vehicle pollutants carbon monoxide (CO), fine Particulate Matter (PM2.5) and Nitrogen Dioxide (NO2). U.S. EPA has noted there is insufficient evidence to support a separate air quality standard for so-called ultra-fine particulate matter.
Somerville – 9	Comment: Similarly, as discussed below, the effect of ultra-fine particulates have been overlooked and may have serious consequences, especially near I-93, which serves the vast majority of traffic bound for the casino. Response: The Project area is in compliance with the National Ambient Air Quality Standards for the motor vehicle pollutants carbon monoxide (CO), fine Particulate Matter (PM2.5) and Nitrogen Dioxide (NO2). U.S. EPA has stated there is insufficient evidence to support a separate air quality standard for so-called ultra-fine particulate matter. The relatively small increase in traffic on I-93 and Route 28 associated with the project will not adversely affect local air quality in Somerville, nor will it exceed any EPA health-based air quality standard.
Somerville – 10	Comment: The distribution list for the SFEIR shows that it was not noticed in alternative media outlets, that it was not placed in alternative information repositories, and that no announcements or summaries were prepared in Spanish, Greek, Haitian Creole, Italian, Portuguese, or any other language used by Somerville's EJ communities.

City of Somerville Mayor – Joseph A. Curtatone	
	Response: The SFEIR was distributed in accordance with the requirements of the Certificate on the FEIR and 301 CMR 11.06.
Somerville – 11	Comment: The project's air quality effects on public health in Somerville (and in Everett and other surrounding communities) should be examined in terms of both criteria pollutants and ultra-fine particulates. Response: The Project's air quality effects for criteria pollutants have been evaluated, and the Project will not exceed any EPA health-based air quality standards. EPA has stated there is insufficient evidence to support a separate air quality standard for so-called ultra-fine particulate matter.
Somerville – 12	Comment: What Wynn has provided is a benefits-benefits proclamation rather than a meaningful benefits-detriments analysis that weighs the project's detriments. These detriments are real and cannot be disregarded. Response: The impacts of and mitigation measures identified for the Project were addressed in the SFEIR and are addressed in the Draft Section 61 Findings found in Chapter 4 of this SSFEIR.
Somerville – 13	Comment: A substantial portion of the proposed use of tidelands is as a driveway and garage that will draw thousands of vehicles directly into the waterfront. The SFEIR fails to acknowledge this facet of the project and the impacts it brings about. Response: The Project will provide substantially more and higher quality public open space than required by Chapter 91 regulations. The relatively small proportion of space associated with vehicular use will ensure that the public may in fact have access to this premier waterfront destination for those who choose to access the Project Site by car, bus, or taxi.
Somerville – 14	Comment: The Expanded Gaming Act itself (M.G.L. c. 23K) acknowledges that gaming poses certain issues not associated with other uses of the waterfront. These issues need to be acknowledged and assessed as part of the discussion on Chapter 91 and public benefits. This is particularly true given that the project changes discussed in the SFEIR include a significant increase in total gaming positions. Response: The Project will provide one of the premier waterfront destinations for the public in the Greater Boston area. The Proponent is excited to work the DEP Waterways program to ensure that public access to the waterfront is promoted and that substantial public benefits are

City of Somerville Mayor – Joseph A. Curtatone	
	provided through the redevelopment of this contaminated industrial site.
Somerville – 15	Comment: Wynn's filings have not made clear the extent to which its facilities will be truly open to the public as opposed to part of a controlled resort casino experience. Response: The SFEIR identified all areas open to the public in Section 1.2.7.2 as Facilities of Public Accommodation. With the exception of service and support and some office areas, the Project will be open to the Public.
Somerville – 16	Comment: Moreover, the lack of detail about the cleanup plans – which apparently will include some combination of Activity and Use Limitations an in-situ stabilization/solidification (ISS) – makes it difficult, if not impossible, to evaluate the benefits of cleanup. It is possible that the cleanup plan will end up significantly limiting the public benefits and will pose long-term maintenance concerns, particularly when exposed to flooding, storm surges, and other natural phenomena. Response: A great deal of detail regarding the Project Site cleanup plans has been provided in previous submittals to EOEEA and in the Draft RAM Plan presented at a public meeting on June 2, 2015. The cleanup plan will in no way limit the public benefits of the Project, and has adequately addressed flooding issues.
Somerville – 17	Comment: In short, the SFEIR poses serious questions as to the project's status under Chapter 91, whether the project's public benefits outweigh its detriments, and whether these benefits are commensurate with the private benefit being realized by Wynn. Response: The Proponent believes that the public benefits of the Project substantially outweigh whatever detriments may exist to the public rights in tidelands and looks forward to receiving a confirmatory determination from the DEP Waterways Program.
Somerville – 18	Comment: The first of these [Release Abatement Measures], for the removal of arsenic contaminated soils and for ISS of low-pH soil, was to be filed on February 27, 2015. As yet it appears that no filing has been made. Response: That is correct. The RAM Plan for the initial remedial response actions was presented at a public meeting held on June 2, 2015.

City of Somerville Mayor – Joseph A. Curtatone	
Somerville – 19	Comment: Similarly, the draft Section 61 Finding for MassDEP pays no attention to air pollutant health effects in Somerville and other nearby communities. Response: The Draft Section 61 Findings in the SFEIR identified mitigation measures to address air quality impacts as required by MassDEP regulations.
Somerville – 20	Comment: In addition, the draft MassDEP Finding does not memorialize commitments made for environmental remediation, nor can it, until the needed RAM plans and other pertinent submittals are filed and reviewed. Response: With respect to air pollution health effects, the RAM Plan referenced above includes a discussion of the provisions to be taken with respect to dust generation related to the remedial activities. This will include a number of real-time air monitoring stations around the perimeter of the Project Site which will allow the rapid identification and rectification of any dust-related issues associated with remedial response actions at the Project Site.
Somerville – 21	Comment: Finally, the draft Section 61 Finding for the Massachusetts Gaming Commission does not include commitment to help Somerville and other nearby communities to deal with problem gambling and other adverse social effects associated with a major gaming facility, nor does it memorialize the commitments made in the various community agreements. Response: The Proponent will abide by the terms and conditions of its host and surrounding community agreements including, without limitation, those provisions related to addressing problem gaming. In addition, five percent (5%) of the gaming tax and an annual fee of not less than $5,000,000 will be dedicated to the "Public Health Trust Fund." This fund will be administered by the secretary of health and human services and will be used to assist social service and public health programs dedicated to addressing problems associated with compulsive gambling including, but not limited to, gambling prevention and addiction services, substance abuse services, educational campaigns to mitigate the potential addictive nature of gambling and any studies and evaluations necessary, including an annual research agenda to ensure the proper and most effective strategies.

City of Malden Mayor – Gary Christenson	
Malden – 1	Comment: I urge you to look more closely at the proposed roadway design for Sweetser Circle and make sure it accommodates the level of current riders as well as anticipate the growing ridership from communities along the NSCT such as Malden, Everett, Revere, Saugus and Lynn. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
Malden – 2	Comment: Reports indicate that when the bike path is complete as many as one thousand cyclists per hour may travel down the trail to Boston at rush hour. Designing Sweetser Circle to accommodate this ridership is not just a convenience it is a safety issue. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
Malden – 3	Comment: I also request that the plans to build the extension of the NSCT under Route 16 to the Mystic River water front be included in any planned mitigation to reduce traffic to and from the Casino development project. Response: The Proponent agrees that an extension of the NSCT to the Mystic River would be extremely beneficial to the Project as well as its neighbors and surrounding communities. The City of Everett is working with the MBTA, the DCR, and advocacy groups such as Bike to the Sea, Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design

City of Malden Mayor – Gary Christenson	
	process can proceed before the Project opens.

City of Revere Mayor – Daniel Rizzo	
Revere – 1	Comment: The MBTA's sale of the land to Wynn was unauthorized. While the lack of transparency at the MBTA makes it difficult to confirm with precision, it appears that the sale of the Everett Shops land to Wynn was never put to a vote of the MassDOT Board, which is the governing body of both MassDOT and the MBTA. It was the MBTA, of course, that owned the land. The City suspects that the MBTA believes it had delegated the authority to convey land valued at less than $15,000,000 to the MassDOT Secretary and MBTA General Manager through the attached vote. However, it is clear that the underlying statutory authority to make this delegation, as referenced in the vote, relates to the MassDOT's role as MassDOT's governing body, not the MBTA's. The delegation of power is therefore unlawful and the conveyance is void. Moreover, as described in my February 4, 2015 letter to MassDOT, Paragraph 6, Wynn initially offered "an eight figure proposal" for the Everett Shops land, suggesting that the discounted price later submitted by Wynn was an attempt to subvert MassDOT Board oversight. Response: MassDOT's counsel has advised the Proponent that the MBTA Board, through a vote on June 18, 2014, delegated authority to the MassDOT Secretary to consummate the referenced land transfer. As set forth in Section 1.3.2 of this SSFEIR, the Proponent and the MBTA had many discussions regarding a potential acquisition of a portion of the MBTA Everett Shops. During these discussions, various options were considered including, for example, (i) the acquisition by the Proponent of the entire property comprising the MBTA Everett Shops, (ii) the acquisition of approximately one-quarter of the MBTA Everett Shops property and the construction of a new storage facility for the MBTA, (iii) relocation of the gate house that currently provides access to the MBTA Everett Shops, and (iv) the transfer of privately held land adjacent to the MBTA Everett Shops to the MBTA. During these discussions, the proposed purchase price fluctuated to reflect the acreage to be acquired and/or the building of replacement facilities. At no time was there any discussion of reducing the price for the purpose of subverting MassDOT Board oversight.
Revere – 2	Comment: The conveyance of the Everett Shops land to Wynn by the MBTA is an "Agency Action" under MEPA and should not have been

City of Revere Mayor – Daniel Rizzo	
	completed prior to the period required under the law and the applicable regulation. Response: In their comment letter to the Proponent's SFEIR, MassDOT stated that due to a breakdown in the MassDOT/MBTA processes, the Deed was executed and delivered prior to the completion of the MEPA process. As set forth in the MassDOT Comment Letter, the transfer of the Acquired Parcels should have been conditioned on the conclusion of the MEPA process and the issuance of the Secretary's Certificate. As a result, for the specific purpose of ensuring full compliance with the MEPA process, the Proponent and the MBTA have structured an escrow arrangement, as further described in Section 1.3.6.
Revere – 3	Comment: The sale of the Everett Shops land to Wynn is void because it violated the MBTA's statutorily required disposition procedure, as described in my letters to MassDOT dated October 2, 2014 and October 29, 2014. Response: As set forth in Section 1.3.6, the Proponent and MassDOT have structured an escrow agreement for the specific purpose of ensuring full compliance with the MEPA process.
Revere – 4	Comment: More specifically, there is no analysis on how the following aspects of operations at the maintenance facility might be impacted: (i) internal circulation and operations based on the fundamental reorientation of the site; (ii) access and egress to Broadway; (iii) use of narrowed lanes on Broadway; (iv) loss of relocation of storage and parking areas; (v) how the MBTA might be expected, over time, to alter its use of the Everett Shops facility to accommodate the adjacent uses; and (vi) how the dual use of the access road for MBTA and casino operations might impact MBTA operations, particularly during the periods of heavy use. Response: Section 1.3.4 of this SSFEIR, pages 1-6 through 1-9 contains detailed descriptions of the internal circulation and operations of the MBTA Everett Shops. Figure 1-4 and Figure 1-5 show the proposed access and on-site operations. Figures 1-8 through Figure 1-27 show how the various vehicles that use the MBTA Everett Shops will access and maneuver on the site as well as how each of those vehicles can safely enter and exit from Broadway (Route 99). The lane widths on Broadway (Route 99) are proposed to be 11 feet wide

City of Revere Mayor – Daniel Rizzo	
	with 10-foot wide travel lanes. These lanes widths have become the standard for use in urban areas, as outlined in MassDOT's *Project Development and Design Guidebook,* the City of Boston's *Complete Streets Guidelines,* the NACTO *Urban Street Design Guide,* and the American Association of State Highway Transportation Officials' (AASHTO's) *A Policy on Geometric Design for Roadways and Streets (AASHTO's Green Book).* The Proponent has coordinated with the MBTA regarding the reconfiguration of the MBTA Everett Shops for parking and storage, and it has agreed that the impacts are negligible. The MBTA has agreed that the reconfiguration of its site will not significantly impact its ability to use the MBTA Everett Shops in the future. The MBTA and the Proponent have agreed that the shared use of the service road for access by both parties will not negatively impact either operation.

City of Revere Mayor – Daniel Rizzo	
Revere (2) – 1	Comment: I urge you to look at how the Everett Casino project can impact the development of the NSCT and its connections to the Mystic River and Boston. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle. The Proponent agrees that an extension of the NSCT to the Mystic River would be extremely beneficial to the Project as well as its neighbors and surrounding communities. The City of Everett is working with the MBTA, DCR, and advocacy groups such as Bike to the Sea, the Livable Streets

City of Revere Mayor – Daniel Rizzo	
	Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens.

Boston Transportation Department	
BTD – 1	Comment: The Proponent's analysis provided in the DEIR demonstrated that adding resort traffic to the proposed roadway system would cause significant peak hour congestion and system failures in Sullivan Square and along Rutherford Avenue. Consequently, the resort proposal is incompatible with the City's plan for a more sustainable transportation system in Charlestown. Response: In the DEIR, the Proponent's analysis demonstrated a method by which the City's surface alternative (with an additional lane in each direction on Rutherford Avenue) could be modified to accommodate future development, including the Project. The DEIR presented analysis of the City's surface alternative, the long-term plan for Sullivan Square, in the "No Build" and "Build" scenarios. In the Friday p.m. peak hour, all intersections that operated at LOS D or better in the No Build Conditions continue to do so in the Build Conditions, and only one intersection (Maffa Way/Rutherford Avenue) would experience a reduction in overall LOS, from LOS C in the No Build Conditions to LOS D in the Build Condition. Similarly, in the Saturday afternoon peak hour, just one intersection would experience a reduction in overall LOS (Main Street/Maffa Way/Alford Street/Cambridge Street), from LOS D in the No Build Condition to LOS E in the Build Condition.
BTD – 2	Comment: The implication is that with this mitigation [the Sullivan Square improvements] in place, existing traffic will divert away from the rotary to the upgraded roadway links in sufficient numbers to offset the anticipated increase in new traffic in Sullivan Square associated with the resort. (Note that we could not find any analysis or data explaining or justifying these traffic reassignments in the SFEIR.) Response: In the Proponent's meetings with BTD prior to filing the SFEIR, BTD suggested that providing routes that would remove traffic from the

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	signalized intersection at Cambridge Street/Maffa Way/Alford Street and thus the rotary would be beneficial in accommodating more traffic from new development, including the Project. This is the approach the City of Boston took in their long-term plan for Sullivan Square. Their proposed street grid pattern provides multiple route options for vehicles to travel through the area, allowing for dispersal of traffic. The success of incorporating these alternate routes in the Proponent's mitigation plan will depend on providing wayfinding to motorists, thus allowing them to choose their most direct route. The reassignment of traffic volumes at Sullivan Square are based on existing origin-destination counts. The data can be found in Appendix D.
BTD – 3	Comment: During these meetings [with the Proponent] BTD repeatedly questioned the effectiveness of the plan citing concerns that spillback effects from the new signals will only worsen traffic conditions rather than improve them. Response: The proposed signals will be coordinated with the adjacent signals along the corridor. Existing spillbacks due to poor coordination between the current signals will be improved in the Build with Mitigations Condition. MassDOT requested supplemental traffic analyses at several key intersections throughout the transportation study area for the proposed Project. The purpose of this analysis is to present a detailed assessment of the proposed mitigation measures using the VISSIM microsimulation traffic analysis software for the Build with Mitigation Conditions VISSIM model for the Friday p.m. peak hour. The proposed mitigation was built into the VISSIM model using the same methodology and parameters as those used in the base Existing Conditions model to provide the most realistic and accurate representation of the improvements. The alternatives were tested with the Friday p.m. "real" peak hour traffic volumes, which were updated to reflect changes in the building program in the SFEIR. The improvements under the Build with Mitigation Conditions are described in Section 2.2.7 of the SFEIR. Both the Existing Conditions and the Build with Mitigation Conditions VISSIM models were updated to reflect more accurately actual conditions

Boston Transportation Department	
	presently occurring in the field. The following updates were made to the Existing Conditions model: • Traffic volumes were updated to reflect the most recent traffic counts taken in December 2014. • Sullivan Circle was updated to reflect the existing lane usage in the field. • Priority rules were updated at the Alford Street and Main Street approaches to Sullivan Circle to more accurately model driver behavior. In addition to the changes made to the Existing Conditions model (above), the following updates were made to the Build with Mitigation Conditions model: • Vehicles that previously entered Sullivan Circle from Cambridge Street and exited onto Rutherford Avenue southbound were rerouted to Spice Street and D Street as was proposed in the SFEIR. • Vehicles that previously entered Sullivan Circle from Cambridge Street and exited onto Main Street eastbound were rerouted to Gardner Street as was proposed in the SFEIR. • Roadway geometry was updated to reflect the current proposed design that was proposed in the SFEIR. • Signal timings were updated to reflect the current proposed design that was proposed in the SFEIR. Due to the different analysis methodologies in VISSIM and Synchro, the results may vary between the software packages. VISSIM has better capabilities to consider driver behaviors, the effects of the entire transportation network, and more customizable traffic signal operations. A relative comparison between the analysis methodologies is important to ensure that both models are representative of the expected future conditions. For example, longer queue lengths in the VISSIM model should also be reported in the Synchro results, even if the actual queue lengths are not the same. The VISSIM model also reports the results by specific movement, while Synchro reports the results by specific lane group (e.g.,

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	through movements and right-turn movements will be reported separately in VISSIM but may be reported together in Synchro if there is a shared through/right-turn lane). Analysis of Alternatives For the VISSIM model, a total of five simulation runs were conducted and the measures of effectiveness ("MOEs") were calculated. The MOEs and other output obtained from the model include traffic volumes, average delays, and average queues at the study area intersections. The detailed results from the five runs were averaged and are provided in Appendix D. A summary table of the results is also provided in Appendix D that contains the Synchro outputs. The following describes the results of the VISSIM simulation model. Sullivan Square, Boston Sullivan Square is a traffic circle consisting of four entrances with merge points (Main Street westbound, Alford Street southbound, Cambridge Street eastbound, and Rutherford Avenue northbound) and five exits with diverge points (Rutherford Avenue southbound, Main Street eastbound, Alford Street northbound, Alford Street southbound, and Main Street westbound). Sullivan Square also contains one signalized intersection within the circle at the intersection of Cambridge Street/Alford Street/Maffa Way. The VISSIM model for Sullivan Square also includes the signalized intersection of Cambridge Street at the I-93 Northbound off-ramp and the proposed signalized intersection of Cambridge Street at Spice Street. Sullivan Square and Cambridge Street currently operate with extensive queues and high levels of congestion during the Friday p.m. peak hour. At certain times of the day, a police detail is used to direct traffic throughout the Sullivan Square area. The VISSIM model provides output for each approach to Sullivan Square and for the signalized intersections of Cambridge Street/I-93 Northbound off-ramp, Cambridge Street/Alford Street/Maffa Way, Cambridge Street/Spice Street, Beacham Street/Main Street, Maffa Way/MBTA Busway North, and Maffa Way/MBTA Busway South. The following describes operations at each location within Sullivan Square. The analysis assumes that the Rutherford Avenue underpass is open and that through traffic along Rutherford Avenue will not enter Sullivan Square.

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	• Cambridge Street/I-93 Northbound Off-ramp – This intersection currently operates with queues along the I-93 Northbound off-ramp that are caused by spillback from the Cambridge Street eastbound approach to Sullivan Square and inefficient lane assignment designations along the ramp. The ramp is currently assigned an exclusive left-turn lane and an exclusive right-turn lane. Vehicles currently use the left-turn lane as a second right-turn lane. The improvements at the intersection modify the lane assignments to accommodate the turning movements that currently occur at the intersection. With these improvements, the intersection is expected to operate at an overall LOS C with significantly reduced queuing along the I-93 ramp, consistent with the Synchro results. • Cambridge Street/Maffa Way/Alford Street – This intersection currently experiences extensive queuing along the Cambridge Street eastbound approach during the Friday evening peak hour. With the proposed improvements along Cambridge Street, additional capacity is provided for vehicles entering Sullivan Square, and the queuing and delay are significantly improved. The intersection is expected to operate at an overall LOS D with improved queuing during the Friday evening peak hour under Build with Mitigation Conditions, which is consistent with the Synchro results. Both models show that the Maffa Way and Sullivan Circle (Alford Street) approaches will experience the most delay at the intersection. • Alford Street Southbound – The Alford Street southbound approach to Sullivan Square is expected to operate at LOS A with minor queuing during the Friday p.m. peak hour under Build with Mitigation Conditions, a slight improvement from the existing conditions. • Main Street Westbound – The Main Street westbound approach currently experiences significant congestion and extensive queuing. The vehicular queues generally extend onto Medford Street during the Friday p.m. peak hour. No specific capacity improvements are proposed for this approach to Sullivan Square. However, due to improvements upstream of this location, the queuing and delays will be slightly improved. • Rutherford Avenue Northbound – The Rutherford Avenue

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	northbound approach currently operates with significant delay and queuing. This approach is closely located downstream from a signalized intersection, which makes entering the circle from Rutherford Avenue difficult for motorists. The proposed alterations to the timing and phasing at the upstream signal are expected to significantly improve conditions at the Rutherford Avenue northbound approach during the Friday p.m. peak hour under the Build with Mitigation Conditions. This approach is expected to improve to operate at a LOS D with minimal queuing during the Friday p.m. peak hour. • Cambridge Street/Spice Street – This intersection is currently unsignalized and is proposed to be signalized under the Build with Mitigation Conditions. This intersection is expected to operate at an overall LOS C during the p.m. peak hour under Build with Mitigation Conditions. The Spice Street approaches are expected to operate with slightly more delay than the Cambridge Street approaches are, consistent with the Synchro output. • Beacham Street/Main Street – This intersection is proposed to be signalized under the Build with Mitigation Conditions. It is expected to operate at an overall LOS A during the p.m. peak hour under Build with Mitigation Conditions, slightly better than the Synchro analysis shows. • Maffa Way/MBTA Busway North – This intersection is proposed to be signalized to facilitate MBTA buses entering the Sullivan Station under Build with Mitigation Conditions. The VISSIM and Synchro analyses at this location show very dissimilar results, mainly due to the nature of random arrivals in VISSIM. Depending on how many buses arrive and at what point in the cycle they arrive, moderate queuing is possible along Maffa Way at this intersection. • Maffa Way/MBTA Busway South – This intersection is proposed to be signalized under the proposed Build with Mitigation Conditions. Based on the VISSIM analysis, it is expected to operate at an overall LOS D, slightly worse than the Synchro analysis indicates. Moderate queuing is expected along Maffa Way at this location. The VISSIM model does not have the complete capability to model some of the more nuanced driver interactions that occur under extremely

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	congested conditions in locations such as the entry points, weaving maneuvers, and crossing maneuvers at some of the locations within Sullivan Square. The VISSIM model does show that the improvements along Cambridge Street will provide a significant benefit to reducing the queuing and congestion that occur along that approach to Sullivan Square and along the I-93 Northbound off-ramp. These improvements will also create a safer environment along the I-93 mainline by reducing the potential for backups to the I-93 mainline from the I-93 Northbound off-ramp. <u>Conclusions</u> A traffic operations analysis was conducted to supplement the transportation analyses for the Project using the VISSIM microsimulation software. The VISSIM microsimulation software allows for a more refined transportation analysis that considers larger connected roadway networks that are presented in this evaluation. The proposed roadway infrastructure was incorporated into the VISSIM model to understand how the improvements will impact traffic operations throughout the selected study area. The results presented in this analysis are generally consistent with the Synchro results. Based on this analysis, the proposed improvements are expected to reduce congestion and queuing in the Sullivan Square area along Cambridge Street and the I-93 Northbound off-ramp. The improvements will provide a more efficient cross section and much needed additional capacity along Cambridge Street. The Rutherford Avenue approach is also expected to improve under the proposed conditions. The Main Street approach to Sullivan Square may experience some benefits from the improvements, but operations are not expected to significantly change when compared to existing conditions.
BTD – 4	Comment: A key element of this plan is the introduction of left-turns from Cambridge Street eastbound into the MBTA station (Beacham Street Extension) and on to Maffa Way and Main Street. The BTD, as part of its three-year planning study for Sullivan Square, had already investigated upgrading this roadway link and concluded that the introduction of left turns at this location would be problematic. Response: The conversion of the left-turn lane on the I-93 Northbound off-ramp to a shared left/right-turn lane would allow vehicles destined to

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	Beacham Street Extension to turn right from the left lane, allowing those vehicles to enter the left-turn lane at Beacham Street Extension without weaving. Queue analysis, developed in SimTraffic (at the request of MassDOT) suggests that, during the Friday p.m. peak hour, average queues in the Cambridge Street eastbound left-turn lane at Beacham Street Extension would be about 113 feet, and the 95th percentile queues would be about 220 feet. During the Saturday afternoon peak hour, average queues would be about 80 feet, and 95th percentile queues would be about 115 feet. Thus, the storage length of 150 feet will be sufficient to accommodate most queue lengths even during peak periods. It is likely that the queue area will be sufficient for most, if not all, other periods of the day.
BTD – 5	Comment: There is an assumption that a large number of vehicles would divert to Spice Street and D Street to avoid delays entering Sullivan Square. However, this route is available to drivers today and it sees very little use. Response: Spice Street, a public way, and D Street, a Massport-owned rail right-of-way, are not well maintained and have poor pavement conditions. After improvements to the roadway and streetscape (per the request of the City of Boston), it will be apparent and welcoming to drivers within the vicinity. The success of incorporating these alternate routes in the Proponent's mitigation plan will depend on providing wayfinding to motorists, thus allowing them to choose their most direct route. Although Spice Street and D Street are available today for traffic to use to avoid passing through the Sullivan Square rotary, the pavement is in poor condition, which does not encourage traffic to use the route. The Proponent will improve pavement conditions by repaving both the streets and sidewalks. There is also no signage directing traffic to use Spice and D streets as an alternate route, which the Proponent has proposed as part of the improvements to the area.
BTD – 6	Comment: The Proponent's plans show widenings along Cambridge Street and D Street that go beyond the existing roadway right-of-way. If the Proponent does not control the land on which the mitigation would be built there is no assurance that the mitigation will be built. Response: Although there is a minimal widening to maintain the sidewalk on Cambridge Street, that widening takes place on MBTA property. Because the plan calls for significant reconstruction of the bus station and

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	parking areas, as well as the creation of a new public road on MBTA property, the easements and/or acquisitions will be performed during the design review process. D Street is owned by Massport. The Proponent has met with Massport, which is agreeable to an easement for public access on D Street as long as the rail right-of-way is maintained.
BTD – 7	Comment: Since no capacity improvements are proposed at the Cambridge Street, Maffa Way and Alford Street intersection, the queues extending back past the off-ramp and on the ramp itself will only worsen relative to existing conditions. Response: The proposed diversions result in a reduction in vehicle traffic volume at the Cambridge Street northbound approach to Maffa Way/Alford Street compared to the No Build Conditions. The No Build Conditions take other area projects into account, such as the Hood Business Park. As such, the proposed improvements and subsequent traffic pattern changes mitigate the Project's impact on Cambridge Street. Additionally, a primary cause of the existing queues on Cambridge Street eastbound is the poor coordination between the signals at the I-93 Northbound off-ramp and at Maffa Way/Alford Street, which will be improved in the Build with Mitigations Condition.
BTD – 8	Comment: The SFEIR reports that the rotary intersection will operate at 114 percent of capacity during the Friday, PM peak hour confirming that queues will continue to be a problem. Response: The Friday p.m. peak hour condition represents a "peak + peak" condition in which the Project's peak traffic, which will occur later on a Friday evening, and the peak rush hour traffic are superimposed. The overall intersection V/c ratio is being governed by the capacity on Maffa Way, which is over capacity. The Friday p.m. "real" peak hour analysis indicates that all approaches are under capacity except the Maffa Way eastbound approach.
BTD – 9	Comment: At the Beacham Street/Main Street intersection the proposed signalization will stop westbound Main Street traffic creating vehicle queues. Given the curved alignment of the roadway leaving the Sullivan Square rotary sight lines may be limited to the back of the queue creating a safety problem. Response: During the design process for the Sullivan Square

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	improvements, the Proponent will ensure all sight lines are appropriate and that intersection sight distance and stopping sight distances are adequate.
BTD – 10	Comment: Insufficient capacity along Broadway will cause significant peak hour traffic congestion on Alford Street in the City of Boston. Response: All but one of the study area intersections on Lower Broadway (Route 99) in Everett will operate with a V/C ratio of under 1.00, the exception being Beacham Street/Lower Broadway (Route 99), which has a V/C of 1.04 in the Friday p.m. Peak Hour Build with Mitigation Conditions. This represents a marked improvement compared to the No Build conditions, where the intersection operates with a V/C of 1.34. The Friday p.m. Peak Hour Build with Mitigation Conditions represents a worst-case scenario; the intersection operates with a V/C of 0.99 in the more realistic Friday p.m. "Real" Peak Hour Build with Mitigation Conditions. The approach with the largest delay and queuing at the intersection will continue to be the Beacham Street westbound approach; delays on this approach will not affect operations in Boston. Queues on Lower Broadway (Route 99) northbound at the site driveway (the only approach whose queues would impact Alford Street in Boston) are not projected to extend as far back as Dexter Street in Boston.
BTD – 11	Comment: In the Response to Comments section of the SFEIR the Proponent states that he "believes" he has control of the land needed to implement the improvements. The Proponent should verify that he in fact has control of these parcels. Response: The Proponent controls, or is in the process of obtaining control of, the necessary properties to complete the improvements proposed herein.
BTD – 12	Comment: The capacity analysis worksheets for the site driveway intersection provide no indication of how pedestrians will be accommodated at the intersection. Response: The intersection of Broadway (Route 99)/Site Driveway has a 29-second exclusive pedestrian phase. The analysis of the intersection reflects that this phase will sometimes be activated by pedestrians. Detailed phasing and timing output from Synchro is included in Appendix F.
BTD – 13	Comment: The design includes an abrupt lane shift heading southbound at the Dexter Street intersection. The Proponent has yet to demonstrate that

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	this is a safe design. Response: The referenced lane shift requires an approximately 18.5-foot horizontal shift. According to the AASHTO Green Book, such a lane shift requires approximately 190 feet, based on a design speed of 35 mph. The lane shift shown on the concept design plans developed by the Proponent provides 205 feet and is therefore adequate. The Proponent will continue to refine the design during the design review process.
BTD – 14	Comment: [BTD is concerned that] congestion will occur downstream of the site drive intersection causing vehicle queues to spill back through the site driveway intersection further reducing its capacity and causing operational problems on Alford Street in Boston. Response: The Build with Mitigation Condition introduces left-turn lanes at the intersection of Beacham Street/Broadway (Route 99) and adjustments to signal timing and coordination along the entire corridor. According to queuing simulations performed in SimTraffic (at the request of MassDOT), 95th percentile queue lengths along Broadway (Route 99) northbound would not exceed 400 feet in either the Friday evening or Saturday afternoon peak hours. There is approximately 1,200 feet between the intersection of Beacham Street/Broadway (Route 99) and the Project Site driveway/Broadway (Route 99).
BTD – 15	Comment: North of the site driveway intersection, the Beacham Street/Broadway intersection will reportedly operate over capacity (104 percent) during the Friday, PM peak hour. The Beacham Street approach to this intersection is expected to operate at 142 percent of capacity. Signal timings would need to be adjusted to balance delays at this intersection resulting in even longer delays on Broadway than reported in the SFEIR. Delays on Broadway north of the site will only encourage more traffic to access the site to/from the south via Sullivan Square. Response: Due to the necessary coordination along Broadway (Route 99), the Beacham Street westbound approach to Lower Broadway (Route 99) will operate as presented in the SFEIR. The Proponent is also proposing to improve the Robin Street and Dexter Street corridor, allowing vehicles to use that improved route, which parallels Broadway (Route 99) to the east.
BTD – 16	Comment: With only 3400 spaces proposed the BTD is concerned that the excess parking demand will end up queued on Boston streets.

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	Response: The peak patron parking demand for the Project is projected to be 2,360 spaces, which is below the proposed on-site parking supply of 2,930 spaces, indicating that more than sufficient parking will be available to accommodate projected demands with sufficient reserve capacity to accommodate potential parking demand fluctuations without impacting adjacent roadways. The Transportation Monitoring and Reporting Program will document the actual traffic and parking demands of the Project, and includes specific measures to address conditions should the measured parking demand exceed the projected demand.

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Stantec –1	Comment: MEPA considers impacts increasing by more than ten percent as being significant and potentially requiring the filing of a Notice of Project Change. Clearly, the project's traffic impacts have increased by more than ten percent since filing the DEIR. Response: While the number of hotel rooms and gaming positions has increased, the amount of retail has decreased and the nightclub use has been eliminated from the Project building program. The estimated number of daily auto trips (patron and employee) has actually decreased by about 6% in the SFEIR analysis, as compared to the DEIR.
Stantec –2	Comment: No analysis has been provided of traffic operations along the four-lane boulevard that will serve as the primary access to the site. Response: The garage entrance located closest to the Project's driveway's intersection with Lower Broadway was analyzed, but not included in the capacity analysis summary tables in the SFEIR. Entering traffic will not be significantly delayed, nor will it form notable queues, as vehicles accessing the Project Site will not be required to yield the right-of-way, nor will they be delayed by significant conflicting traffic volumes.
Stantec –3	Comment: The SFEIR reports that certain parcels located along the alignment of the proposed service driveway have yet to be acquired by the Proponent. This creates uncertainty relative to the Proponent's ability to build the project as proposed. Response: The Proponent has acquired or is in the process of acquiring the necessary property rights to construct the service driveway.

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Stantec – 4	Comment: The proposed service driveway is intended to, at times, hold taxis, accommodate services vehicles, and provide emergency access. The Proponent should provide a detailed management plan describing how all of these activities can be accommodated within the limited width of the service drive. Response: Figures 1-16 through Figure 1-35 in this SSFEIR show service vehicles traversing the Project Site via the proposed service driveway. There is a pull over area on the service driveway that vehicles can use to lay over, if necessary. A designated taxi holding lane is provided at the Porte Cochere.
Stantec –5	Comment: Coordination between the City and MassDOT may be required to the extent that City proposed improvements affect operations of the MassDOT-owned-I-93 ramp to Cambridge Street however, the City should be making decisions regarding mitigation measures on these roadways. Response: The Proponent has worked closely with MassDOT to minimize the effect of its proposed improvements. The Proponent has offered to meet with representatives from the City of Boston on multiple occasions. As of the date of this filing, despite the Proponent's efforts, the City of Boston has declined to participate in any new discussions regarding the Proponent's proposed improvements. The Proponent remains willing to meet with the City of Boston and MassDOT for the purpose of coordinating mitigation measures.
Stantec –6	Comment: The shared parking analysis predicts parking demands that are well below parking supplied provided by comparable resorts. Response: The detailed parking demand analysis, including the patron length of stay, is included in the technical appendix that accompanied the Supplemental FEIR. The projected parking demands are reflective of the transportation resources that are or will be available to the Project Site. The parking supply will be sufficient to meet the projected demand with additional reserve capacity to accommodate potential parking demand fluctuations.
Stantec –7	Comment: The BTD still asks that a long-term mitigation plan also be developed by the project proponent. Response: In the DEIR, the Proponent's analysis demonstrated a method by which the City's surface alternative could be modified to accommodate

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	future development, including the Project. In the MassDOT Comment Letter, MassDOT requested the preparation of a second SFEIR for the purpose, in part, of enabling the City of Boston, the Proponent, the Massachusetts Gaming Commission ("MGC") and MassDOT to establish a process for the development of the long-term improvements for the Rutherford Avenue corridor. The SFEIR Certificate noted that such process would "require participation by the City [of Boston], the Proponent, the MGC and MassDOT" and that the "success of this effort would be dependent on the active and constructive participation by all of the participants." Notwithstanding, the SFEIR Certificate observed that building consensus between the parties could pose a significant challenge given the litigation pending between the City of Boston and the MGC. As detailed in Section 3.21, following receipt of the SFEIR Certificate, MassDOT convened a meeting for the purpose of establishing a planning process for the development of long-term improvements for the Rutherford Avenue corridor. This meeting was attended by representatives from MassDOT, MEPA, Energy and Environmental Affairs, MGC, City of Everett, City of Somerville, and the Proponent. The City of Boston declined to attend the meeting. As of the date of this filing, despite the Proponent's efforts, the City of Boston has declined to participate in any new discussions regarding the long-term planning process for the Rutherford Avenue corridor. As the SFEIR Certificate observes, the long-term planning process is dependent on the active and constructive participation by all of the participants. At this juncture, the City of Boston has declined to participate thereby thwarting the efforts of the Secretary of Transportation and the stakeholders to advance the planning process. Notwithstanding, following the filing of this SSFEIR, the Proponent remains willing to meet with, or without, the City of Boston to advance the planning process and will continue to reach out to the City of Boston and other stakeholders and interested community members accordingly.
Stantec –8	Comment: Evaluation of AM peak hour traffic operations is critical to not only understanding project related traffic impacts but also in terms of understanding the impacts of proposed off-site roadway improvements. Response: The a.m. analysis provided indicates that there will be minimal

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	impact to the intersections at Sullivan Square following the completion of the proposed roadway improvements. Under Build Mitigated Conditions, all of the study area intersections operate at an overall LOS D or better during the Friday a.m. peak hour or a LOS consistent with No Build Conditions. Section 3.3.4 (page 3-6 through 3-7) of the SSFEIR provides the details of the a.m. analysis including traffic volumes and CASTs.
Stantec –9	Comment: The Proponent must be required to assess AM peak hour traffic operations. Response: The Friday a.m. peak hour analysis is provided in Section 3.3.4 (page 3-6 through 3-7). The a.m. peak hour analysis indicates that the proposed improvements will accommodate the Build Conditions, improving operations compared to No Build Conditions.
Stantec –10	Comment: The Proponent has not been able to provide solid evidence throughout the MEPA process to support assumed mode choices in the vehicle trip generation analyses. More conservative assumptions should be used. This is particularly true with respect to the three percent of trips assigned to the preferred park and ride service. Section 2.3.1 [of the SFEIR] refers to "possible" parking accommodations at Logan Express lots. If appropriate parking cannot be found to support this service then the three percent goal may not be met. Response: The mode share values used in the MEPA process were developed in consultation with, and approved by, MassDOT. The trip generation methodology was developed in coordination with MassDOT, who has approved the methodology. Parking for the Premium Park and Ride service has been discussed with Massport. If agreements cannot be made to co-locate in Massport's Logan Express lots/garages, the Proponent believes there are opportunities in those general areas where it would lease parking to service the Premium Park and Ride service. Within the trip generation process, it has been assumed that only 3% of patrons will use this service.
Stantec –11	Comment: The Proponent should be required to implement or fund capacity improvements on the MBTA system to mitigate impacts on system capacity. Response: The Proponent has worked with MassDOT and the MBTA to develop a methodology to provide an Orange Line subsidy. The details of

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	that methodology can be found in Section 2.3.1, page 2-24 through 2-26. The commitment to provide the subsidy is included in the Draft Section 61 Findings in Chapter 4, page 4-19, 4-37, and 4-39.
Stantec –12	Comment: The Proponent argues that the reduction in nightclub and retail space lowers trip generation estimates more than the 25% increase in hotel rooms and ten percent increase in gaming positions increases the estimate. Nightclub and retail space are typically considered ancillary uses in studies of other casino proposals with gaming positions and hotel rooms being the only independent variables considered in traffic forecasts. Response: The Project's trip generation analysis accounts for each of the Project Site's major uses. While many retail patrons will also be casino and/or hotel patrons, it is anticipated that the Project's retail use will independently draw visitors to the Project Site and should therefore be analyzed separately.
Stantec –13	Comment: The trip generation forecasts for the project should be revisited. Response: The trip generation methodology was developed in coordination with MassDOT, who has approved the methodology.
Stantec –14	Comment: The Proponent should provide examples of other comparable facilities that have been able to achieve these mode choice figures or use more conservative traffic forecasts in the analysis. Response: The trip generation rates and underlying assumptions are summarized in the SFEIR, Chapter 2, Table 2-7, and are consistent with MassDOT/Green DOT mode shift goals, and the Metrofuture Regional Plan. MassDOT has approved the underlying methodology and approved the use of the travel mode shares contained therein. The mode share analysis indicates that 29% of casino patrons and 59% of casino employees are projected to arrive via a non-SOV mode.
Stantec - 15	Comment: Independent of the intersection capacity analyses provided, the Cambridge Street/Maffa Way/Alford Street intersection operates with long queues during the existing Friday PM peak hour. No capacity improvements are proposed for this intersection yet the Build with mitigation condition traffic volumes will be 14 percent higher based on the SFEIR forecasts. Consequently, we can conclude that queuing conditions will only worsen under future Build with Mitigation conditions relative to existing conditions. A properly validated and calibrated model applied to

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	the Build with Mitigation condition should yield the same conclusion. Response: Although new lane capacity is not being proposed at this location, there are capacity changes in the traffic signal timing as well as the benefits of adaptive signal control and coordination. The models have been appropriately calibrated following MassDOT and BTD procedures for calibration. The models were reviewed extensively by the MassDOT's Boston Traffic section as well as District 6 Traffic.
Stantec –16	Comment: New traffic counts collected in December 2014 are reportedly 13 to 15 percent higher than traffic counts in the FEIR. Volume changes of this magnitude could lower intersection operation by a full letter grade. A table should be provided to compare existing conditions peak hour operations for both the FEIR and SFEIR. Response: The Existing Conditions Synchro outputs and CASTs submitted within the FEIR dated June 30, 2014, were based on counts provided by the City of Boston dated 2008. However, the traffic volume Figures 4-120 and 4-122 within the FEIR are based on the counts conducted by the Proponent in May and June of 2013. The analysis based on the 2008 counts was submitted in error. The correct existing conditions analysis based on the May/June 2013 counts is provided in Appendix D. Synchro outputs and CASTs are also provided in Appendix D. A comparison table of the existing conditions operational analysis, which compares the submitted FEIR existing analysis (2008 volumes), the correct FEIR existing analysis (May/June 2013 volumes), and the SFEIR existing analysis (2014 volumes), is also provided in Appendix D. Although the SFEIR volumes are greater than the May/June 2013 volumes, the difference in operating conditions is relatively small.
Stantec –17	Comment: If these [land] takings cannot be accomplished the mitigation plan cannot be built as proposed. The Proponent must first demonstrate that safe and effective mitigation can be built before the project is released from the MEPA process. Response: The Proponent controls, or is in the process of obtaining control of, the necessary properties to complete the improvements proposed herein.
Stantec –18	Comment: Extending the left-turn lanes to the south to consider more conservative traffic forecasts for the project and to incorporate a pedestrian

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	phase at the site driveway signal will only worsen the offset situation and increase potential impacts to the BWSC property. Response: A pedestrian phase is incorporated into the intersection's signal phasing. Left-turn lanes will not need to be extended beyond what is shown in the SFEIR.
Stantec –19	Comment: The [Beacham Street/Broadway] intersection is a bottleneck under existing conditions and the existing volume-to-capacity ratio only 101 percent. Response: The intersection operates with a 1.01 V/C ratio in the Existing Conditions in part because the Beacham Street westbound approach is over capacity. To maintain coordination along Lower Broadway, this condition will continue in the Build with Mitigation Condition. The Proponent will be constructing improvements along Robin Street and Dexter Street in the City of Everett, which will also provide an alternate route for traffic currently using Beacham Street westbound.
Stantec –20	Comment: The new signal at Maffa Way will interrupt the progression of southbound traffic on Maffa Way. Response: Maffa Way currently has no progression because there is only one signal on Maffa Way. The proposed signals along Maffa Way will be actuated-coordinated to provide better progression. The two proposed signals adjacent to the MBTA Sullivan Square Station will be coordinated with the existing signal located at the intersection of Cambridge Street/Maffa Way/Alford Street. The Maffa Way southbound traffic will be provided 27-30 seconds of green bandwidth along the corridor.
Stantec –21	Comment: The 2023 Build PM peak hour operation results for the Cambridge Street intersections with the I-93 off ramp and with Spice Street/MBTA Driveway are overstated. There is no accounting for or adjustment made for the downstream blockage at the Cambridge Street/Maffa Way/Alford Street intersection where Cambridge Street traffic is served by only 33 seconds on the 100 second cycle. Response: At the intersection of Cambridge Street/Maffa Way/Alford Street, the Cambridge Street approach will utilize 50 seconds out of the 100-second cycle. Phase 1 of the signal timings include the Cambridge Street northbound approach which overlaps with the Alford Street southbound approach for 23 seconds. Phase 7 will solely accommodate the Cambridge

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	Street northbound approach for 27 seconds. The Cambridge Street eastbound and Maffa Way westbound, and Alford Street southbound approaches will achieve adequate progression without interference from downstream operations. The 2023 Build Friday p.m. peak hour analysis for the Cambridge Street intersections are provided in Appendix D. Adjusted offset timings from the adjacent signals have been established to ensure progression is achieved. The existing and proposed signals in the Sullivan Square area, including the intersection of Cambridge Street/Maffa Way/Alford Street, will be connected to BTD Traffic Management Center. This will allow BTD to make real-time adjustments, as necessary, and allow adaptive signal control to be used in the Sullivan Square area.
Stantec –22	Comment: At the Maffa Way intersection, the Cambridge Street right turn on red capacity of 477 vph is grossly overstated. Response: The Synchro output submitted in the SFEIR for the intersection of Cambridge Street/Maffa Way/Alford Street showed an adjustment to the right-turn-on-red status of the Cambridge Street eastbound approach. The Synchro analysis summarized in the CAST of the SFEIR (Tables 2-41, 2-42, and 2-43), indicates that the Cambridge Street approach prohibits right turns on red at the Maffa Way intersection and a right-turn-on-red reduction should not be present. The updated Synchro output at this location for the Friday p.m. peak hour is provided in Appendix D.
Stantec –23	Comment: The introduction of another signal on Cambridge Street at Spice Street, which is even closer to the [I-93 off] ramp, will likely aggravate the existing condition. Response: The two signals along Cambridge Street, at the I-93 off-ramp and at Maffa Way/Alford Street, currently have no progression, creating congestion to the west of the I-93 off-ramp, blocking the intersection at the I-93 off-ramp, thus creating backup along the off-ramp itself. The proposed signals will be coordinated to allow significantly more Cambridge Street eastbound traffic receiving a green light at the I-93 off-ramp to continue uninterrupted through the intersection of Cambridge Street/Spice Street and through the intersection at Maffa Way/Alford Street. The City of Boston requested that the Proponent investigate the use of real-time adaptive signal control in the Sullivan Square area to further enhance

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	the progression of traffic along the corridors. However, analyzing the future operations at the study intersections under adaptive signal control is limited due to its real-time aspect, which accommodates various changing traffic patterns, a condition which Synchro and VISSIM is unable to replicate. The VISSIM analysis provided in Appendix D represents the worst-case scenario during the heaviest peak period.
Stantec –24	Comment: At Spice Street 80 percent of the cycle allows for eastbound movement on Cambridge Street but during all but 33 seconds this approach will be blocked due to downstream intersection operation. Response: At the intersection of Cambridge Street/Spice Street, the Cambridge Street approaches will utilize 65 seconds out of the 100-second cycle. Phase 1 of the signal timings will include the Cambridge Street eastbound and westbound phases for 45 seconds, and Phase 6 will accommodate the Cambridge Street eastbound advanced left-turn phase for 20 seconds. The Cambridge Street eastbound and westbound approaches will achieve adequate progression without interference from downstream operations. The 2023 Build Friday p.m. peak hour operation results for the Cambridge Street intersections are located in Appendix D. Adjusted offset timings from the adjacent signals have been established to ensure progression is achieved. Adaptive signal control, which the City of Boston has requested be installed in Sullivan Square, will further enhance the coordination capabilities. The proposed signals will be hard-wired to Boston's Traffic Management Center, and will be able to be adjusted easily by the city, if necessary.
Stantec –25	Comment: Cambridge Street westbound left turns into Spice Street will too often occupy the left lane essentially creating a default left turn lane and thereby restricting the through movements to the right lane. This could lead to queuing in the westbound direction on Cambridge Street. Response: The Cambridge Street westbound left lane at Spice Street will have, at most, approximately 17 vehicles utilizing it (during the Friday p.m. peak hour). This low volume of vehicles has been accounted for in the analysis, and will have a minimal impact to the operations.
Stantec –26	Comment: The operation of the critical stop controlled intersection of Alford Street and the Sullivan Square Rotary is not provided. Response: The Sullivan Square rotary as a whole was analyzed in VISSIM,

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	as Synchro is not accurate in analyzing complex rotaries. The VISSIM outputs for Alford Street southbound approaching the rotary indicate that operations at this intersection improve. The VISSIM outputs for Sullivan Square can be found in the Appendix D.
Stantec –27	Comment: The merge on Alford Street north of the rotary was not analyzed. Response: The merge analysis at Alford Street and Rutherford Avenue is based on the Highway Capacity Software. Under the existing and No Build Conditions, the merge operates at a LOS B or better during all peak periods analyzed. Under the Build (2023) Friday p.m. "real" peak hour conditions, the merge will operate at a LOS C or better during all peak periods analyzed. The detailed HCS reports can be found in Appendix D.
Stantec –28	Comment: At the Beacham/Main Street intersection the proposed traffic signal will introduce periods when northbound Main Street is stopped and queues will form. Those queues will in turn introduce a very short sight distance in advance of the back of the queue. Response: During the design process for the Sullivan Square interim improvements, the Proponent will ensure that all sight lines are appropriate and that intersection sight distance and stopping sight distances are adequate.
Stantec –29	Comment: Consideration of pedestrian signal phasing may result in reduced capacity for vehicular traffic movements and longer vehicle queues. Response: Pedestrian phases, with MUTCD- and ADA-compliant pedestrian timing, are provided at each of the signalized intersections along Broadway/Alford Street (Route 99). The intersection of Alford Street (Route 99)/Dexter Street includes concurrent pedestrian phasing, while Lower Broadway's intersections with the Project Site driveway, Beacham Street, and Bowdoin Street each have exclusive pedestrian phasing. The traffic analysis provided in the SFEIR reflects a Build with Mitigation Condition that includes these pedestrian phases and timings.
Stantec –30	Comment: Figures 2-77 and 2-80 show volume networks which do not properly add up around the rotary. The entering volumes do not match the exiting volumes. Reported volumes turning right onto Main Street

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	southbound appear to be in error. Response: The volume network inaccuracies in the Sullivan Square graphics contained in the SFEIR have been corrected. There were missing background trips throughout the roadway network, which have been added to the networks. The volume figures have been revised to indicate the correct entering and exiting volumes of the rotary. The reported volumes at Alford Street and Main Street have also been updated. Refer to Section 3.3.3, pages 3-5 through 3-6 and Figure 3-2 through Figure 3-of the SSFEIR.
Stantec –31	Comment: The Proponent should be required to define necessary improvements and commit to meaningful and proportionate mitigation for Rutherford Avenue. Response: Synchro analysis provided in the SFEIR shows that improvements beyond adjustments to signal timing are not required. Project mitigation is summarized in Chapter 4 of this SSFEIR, see pages 4-1 through 4-10.
Stantec –32	Comment: The Proponent has not provided any analysis of the City's long-range plan since filing the DEIR. The DEIR demonstrated that the casino resort proposal is not compatible with the City's long-range plan. Response: In the DEIR, the Proponent's analysis demonstrated a method by which the City's surface alternative, through additional lanes on Rutherford Avenue between Mishawum Street and Arlington Street, could be modified to accommodate future development, including the Project. The DEIR presented analysis of the City's surface alternative, the long-term plan for Sullivan Square, in the "No Build" and "Build" scenarios. In the Friday p.m. peak hour, all intersections that operated at LOS D or better in the No Build Conditions continue to do so in the Build Conditions, and only one intersection (Maffa Way/Rutherford Avenue) would experience a reduction in overall LOS, from LOS C in the No Build Conditions to LOS D in the Build Condition. Similarly, in the Saturday afternoon peak hour, just one intersection would experience a reduction in overall LOS (Main Street/Maffa Way/Alford Street/Cambridge Street), from LOS D in the No Build Condition to LOS E in the Build Condition. The Project-generated traffic as presented in the SFEIR is less than what was projected in the DEIR, so this condition would be the same or better than presented in the

Stantec Consulting Services, Inc.	
	DEIR.
Stantec –33	Comment: It is also a concern that employees parked in remote lots that are proximate to public transportation will be competing for spaces used by commuters destined to Boston. Any "displaced" transit riders destined to Boston may choose to drive further congesting Boston streets and roadways leading into the City. Response: The Proponent is in the process of negotiating the leases for the off-site employee parking, the locations of which have been selected where excess parking is available for use by employees and which will not displace current parking. Employees will be required to park at the designated off-site parking facilities and to use the free employee shuttle. As such, employees will not displace transit riders destined to the City of Boston.
Stantec –34	Comment: If the shared parking analysis results are ignored, the typical casino parking ratios indicate 4,626 spaces for the resort. The Philadelphia standards would indicate 3,979 patron spaces. These more simplistic but likely more reliable calculations indicate a significant shortage of parking at the subject site. Response: The parking demand calculations for the Project are reflective of transportation resources that are or will be available to the Project and the measures that will be employed to manage the traffic and parking demands of the Project. Applying such measures results in a calculated peak parking demand for patrons of 2,360 spaces, which is less than the number of parking spaces that will be provided (2,930) indicating that sufficient parking will be available to accommodate the projected demands with reserve capacity for potential parking demand variations. The Transportation Monitoring and Reporting Program will document the actual traffic and parking demands of the Project, and includes specific measures to address conditions should the measured parking demand exceed the projected demand.
Stantec –35	Comment: The Proponent suggests that a parking shortage will force patrons to leave their cars at home and travel by alternative modes. The City believes this strategy may be effective for employees who regularly travel to the site but casino patrons, who visit infrequently, may not be knowledgeable of expected parking conditions at the time of their planned

Stantec Consulting Services, Inc.	
	visit and are much less likely to shift modes. Response: The parking demand calculations for the Project inclusive of the transportation resources that are or will be available to the Project and the measures that will be employed to manage the traffic and parking demands of the Project demonstrate that sufficient parking will be available to accommodate the projected demands with reserve capacity for potential parking demand variations. The quantity of parking to be provided within the Project Site was balanced between accommodating the projected demand with a reasonable reserve and the desire to constrain the available parking to promote the use of alternative modes of travel to single-occupant vehicles. The Project, as designed, achieves this balance and incudes a comprehensive Transportation Demand Management (TDM) that will encourage guests to use public transportation, water shuttle, or the shuttle bus service that will be operated as a part of the Project. These amenities will be marketed to guests of the Project and will serve as an inducement to achieve both a traffic volume and parking demand reduction for the Project. In addition, the Transportation Monitoring and Reporting Program will serve to document the actual traffic and parking demands of the Project, and includes specific measures to address conditions should the measured parking demand exceed the projected demand.
Stantec –36	Comment: A greater concern for the City of Boston is that the parking supply cannot serve the future demand causing vehicles waiting to enter a full garage to queue on City streets. Response: The parking demand calculations for the Project inclusive of the transportation resources that are or will be available to the Project and the measures that will be employed to manage the traffic and parking demands of the Project demonstrate that sufficient parking will be available to accommodate the projected demands with reserve capacity for potential parking demand variations. As such, the Project will not result in queuing of vehicles waiting to enter the garage to the extent that such queuing would impact public streets.
Stantec –37	Comment: The analysis of the potential traffic congestion impacts on MBTA bus trip times is presumably based on the intersection capacity analysis and travel delay results in the SFEIR. As noted above, there are multiple locations where there the intersection capacity analyses are overly optimistic. The corrections proposed above should be considered in a

Stantec Consulting Services, Inc.	
	revised traffic analysis as they are likely to show that casino resort related bus travel delays will be greater than reported in the SFEIR. Response: As detailed in the responses to the prior comments, the Proponent has appropriately analyzed the intersections. No corrections are required, and the bus travel time analysis does not require updating.
Stantec –38	Comment: Include in the proposed transportation monitoring program automatic traffic recorder counts on Broadway and Alford Street as well as on the other locations noted in the SFEIR. Response: The Transportation Monitoring and Reporting Program has been expanded to include automatic traffic recorder counts on Broadway in the City of Everett and Alford Street in the City of Boston.
Stantec –39	Comment: [The transportation monitoring program should include][m]ore frequent reporting on parking demand, perhaps weekly, is appropriate. Response: The parking component of the Transportation Monitoring and Reporting Program has been expanded to include reporting of monthly or more frequent parking demand data as available through the Project's parking control system and will be documented in the annual monitoring program report.
Stantec –40	Comment: Bus route ridership should be included [in the transportation monitoring program] for Sullivan Square routes as well. Patrons arriving from Boston are likely to realize that they can exit the Orange Line two stops before Wellington Station and access an MBTA bus at Sullivan Square. Response: Patron ridership of MBTA buses is expected to be minimal. The Project is expected to have a weekday peak hour of 10:00 p.m., when MBTA buses running from Sullivan Square to the Project Site are running much less frequently than during roadway peak periods, and one of the three buses (#105) is not running at all, while the Proponent's shuttles will vary headways based on demand, never running less frequently than two buses per hour, and running as frequently as eight buses per hour during Project peak periods. The shuttles will be free for Project patrons and will serve as an attractive option to complete the trip between the Orange Line and the Project Site.

Stantec Consulting Services, Inc.	
Stantec –41	Comment: In Section 2.7.3 [of the SFEIR] indicates that the Proponent will respond to "operational deficiencies" however, the monitoring program does not include a commitment to conduct operational analysis or even field observations to identify deficiencies. Standards for deficiencies should be defined and analyses and observations to quantify deficiencies should be part of the [transportation monitoring program]. Response: The monitoring program has been revised to incorporate performing operational analysis to identify deficiencies.
Stantec –42	Comment: The method for recording resort trips through the [Sullivan] Square should be defined. The allowable volume limits are not known and need to be defined. Response: Pursuant to the terms of the gaming license issued by the Gaming Commission to the Proponent, the Proponent has agreed to work with the City of Boston to develop an mutually-agreed upon methodology for monitoring Project traffic in Sullivan Square.
Stantec –43	Comment: The "then" actions included in the [transportation monitoring] plan to respond to deficiencies are generally limited to non-structural, operational strategies. The operational strategies are very similar to the strategies proposed as part of the project to meet the alternative travel mode goals. The City would like assurances that funding is available to address structural needs should deficiencies be observed and suggests that a significant contingency fund be available to the City to address these concerns. Response: If there are operational deficiencies, it is in the Proponent's best interest to correct them. The Proponent recognizes that mitigation actions are not limited to simple changes such as signal timing modifications, but could include larger infrastructure projects or incentives to increase use of non-auto modes.

Environment Department	
Boston - ED– 1	Comment: The Proposed project has not [adequately] considered induced growth [or] our question about the potential for business and job loss as a result of the proposed project.

Environment Department	
	Response: Prior MEPA filings have addressed growth factors as they may fall within MEPA jurisdiction.
Boston - ED– 2	Comment: The mode share projections [for water shuttle] have not been substantiated and the [air quality] analysis has not been conducted. Response: An air quality impact analysis of the water transportation vessels was not required as part of MEPA or state agency review of the Project.
Boston - ED– 3	Comment: [BED requested that the Proponent identify, and the proponent has not] identified the number of shuttle buses expected to provide services, the fuel that would be used and a description of how bus drivers would be accommodated during layovers so that bus idling (regardless of fuel source) would not be used for heating or cooling. Response: The SFEIR (Section 2-4-3) identified in detail the numbers of shuttle buses to be used on each proposed route and during each hour of the day. In accordance with Massachusetts State Law, buses will not idle for greater than five minutes.
Boston - ED– 4	Comment: Alternative-fuel buses should be the standard for all shuttle buses. Response: Alternative fuel for shuttle buses will be considered.
Boston - ED– 5	Comment: In order to minimize diesel emission from the site, we suggest the use of PV battery back-up for life-safety systems. Response: The Project will have a very large amount of PV units (panels) as part of the power strategy. Those panels are best optimized by full-time use during available daylight hours. Isolating the panels on the life-safety systems, with battery storage, would result in part-time use as capacity is reached, as well as requirements for a very large battery storage area. It is also unclear if such a system could be designed to meet applicable life safety codes.
Boston - ED– 6	Comment: The locations and timing of perimeter monitoring, staff oversight and other details [of particulate matter monitoring for remediation and excavation activities] are not described. Response: These are described in the RAM Plan presented at a public meeting on June 2, 2015, held as part of Wynn's Public Involvement Plan (PIP) activities, a copy of which is available at http://www.wynnineverett.com/files/17152110_PIP%20Plan_FINAL_Draft_2015-

Environment Department	
	06-02.pdf.
Boston - ED– 7	Comment: The plan developed by the LSP should have been included in the SFEIR. It should now be circulated to the SFEIR distribution list for comments and questions. Response: The RAM Plan was presented at a public meeting on June 2, 2015, held as part of Wynn's Public Involvement Plan (PIP) activities a copy of which is available at http://www.wynnineverett.com/files/171521-10_PIP%20Plan_FINAL_Draft_2015-06-02.pdf.
Boston - ED– 8	Comment: While these steps [relative to public involvement requirements of the Massachusetts Contingency Plan] are necessary, the vast majority will occur during the construction period and do not address the issue of public and municipal input into development of a detailed, effective and enforceable CMP. Response: As a designated Public Involvement Plan site under the MCP, there will be ample opportunity for public and municipal input on MCP remedial response actions.
Boston - ED– 9	Comment: [T]ruck routes [are not] delineated in the SFEIR. Response: Trucks will be directed not to use local streets. Trucks moving contaminated soil from the Project Site will be directed to head south on Route 99 to I-93, or north on Route 99 to Route 16 and then to I-93. For those connections to I-93, trucks will travel to the appropriate receiving facilities for the soil.
Boston - ED– 10	Comment: There is still no indication of a regulatory determination in regards to 310 CMR 9.3.2, Categorical Restrictions on Fill and Structures. The status of the proposed project should be clarified and a mechanism identified to notify commenters of a decision. Response: The Project will be filing a Chapter 91 license application with DEP Waterways addressing compliance with the implementing regulations and such application will be publicly noticed in the Environmental Monitor which is published by EOEEA.
Boston - ED– 11	Comment: The SFEIR does not address the retreat of wetlands due to sea level rise. As the loss of wetlands on either side of the river will affect the other, a maintenance plan or other means to monitor and sustain necessary wetland

Environment Department	
	resources should be part of Wynn's operational system. Response: The Certificate on the FEIR did not require the Project to address the retreat of wetlands due to sea level rise. The Project, in fact, is designed to restore a severely damaged Coastal Bank and to enhance salt marsh areas in order to improve the functions of storm damage prevention provided by Coastal Bank and a living shoreline.
Boston - ED– 12	Comment: The City requests a summary of the basis for the 10 year [TDM monitoring] term. Response: 10 years is the standard practice for monitoring. The monitoring is codified through MassDOT's Section 61 finding in Chapter 4.
Boston - ED– 13	Comment: How will patrons be encouraged to provide transportation use information? Response: The Proponent will administer surveys regarding transportation use to its customers and will provide an incentive program to customers to encourage them to fill out the survey.
Boston - ED– 14	Comment: Is employee parking being subsidized by Wynn? If so, what is the subsidy? Response: Parking for employees will be complimentary.
Boston - ED– 15	Comment: To ensure convenience and prevent the use of taxis, potential MBTA patrons, including employees, should be provided with information about schedules for the buses identified by Wynn as useful for access to the proposed project. Response: The Proponent's marketing plan to provide information about non-automobile transportation services to employees and patrons is outlined in Section 4.16.2 (pages 4-124 through 4-131) of the FEIR.

Boston Redevelopment Authority	
Boston-BRA– 1	Comment: The project will prevent the implementation of long term planning objectives for the Charlestown neighborhood. Response: The SSFEIR has addressed the long-term planning objectives of

Boston Redevelopment Authority	
	the Charlestown neighborhood in Section 3.2, pages 3-1 through 3-3, to the extent these objectives are within MEPA jurisdiction.
Boston-BRA– 2	Comment: The project's water transportation objectives remain very unrealistic and directly risk overwhelming land based transportation systems including roadways in Charlestown. Response: The trip generation methodology was developed in coordination with MassDOT, who has approved the methodology. The Proponent will be providing incentives to Project patrons and employees to use the water shuttle system, which will be convenient for patrons and employees on all public transportation lines.
Boston-BRA– 3	Comment: The Supplemental FEIR failed to address the limitations of the ferry access caused by the clearance of the Alford Street bridge. This issue, combined with the lack of docking and berthing area throughout Boston's waterfront to accommodate the project's ferry trip assumptions casts extreme doubt on water transportation being a plausible mode of access to and from the project area. Response: As stated in the FEIR Certificate on page 14, custom-designed water transportation vessels will be designed and constructed to ensure that bridge openings are not required at the Alford Street bridge. The SFEIR scope did not require further analysis of this particular issue. Discussions with potential vessel operators suggest that docking facilities in the South Boston waterfront and downtown will be available.
Boston-BRA– 4	Comment: The Supplemental FEIR failed to include a Construction Management Plan. Response: Chapter 12 of the FEIR addressed Construction Management for the Project. The SFEIR was limited to specific scope items, and did not require additional information regarding proposed construction management.
Boston-BRA– 5	Comment: Due to the fact that both remediation and construction will occur concurrently, priority should be given to the development and implementation of the RAM plan, including but not limited to the inclusion of mitigation measures to avoid and minimize adverse impacts. Response: The draft RAM Plan, issued on June 2, 2015 and presented at a public meeting, provides for prioritization of remediation activities on the

Boston Redevelopment Authority	
	Project Site, and is available to the public on the Project website.
Boston-BRA– 6	Comment: It is imperative that the RAM plan be disseminated. Response: The RAM Plan was presented at a public meeting on June 2, 2015, held as part of the Proponent's Public Involvement Plan (PIP) activities.
Boston-BRA– 7	Comment: The Supplemental FEIR does not include a detailed future analysis of carbon monoxide levels at the intersections where the level of service is expected to deteriorate to a D and the project is projected to cause a 10 percent increase in traffic or where the LOS is E or F and the project contributes to a reduction in LOS. Response: An analysis of CO2 levels at these intersections was not within the scope of the SFEIR.
Boston-BRA– 8	Comment: The project does not currently include a commitment to enhance pedestrian connections between the project and Sullivan Square via Broadway/Alford Street. Response: The Proponent's proposed mitigation in Sullivan Square and on Broadway/Alford Street (Route 99) currently includes improved pedestrian environments, including new sidewalks, landscaping, and lighting, as appropriate.
Boston-BRA– 9	Comment: The project should include wide sidewalks, tree plantings, and pedestrian-oriented enhancements within the area surrounding the project. Response: The Proponent's proposed mitigation in Sullivan Square and on Broadway/Alford Street (Route 99) currently includes improved pedestrian environments, including new sidewalks, landscaping, and lighting, as appropriate.
Boston-BRA– 10	Comment: More transparent and less reflective glass types, more similar to the local context will help the tower relate to the surrounding area and mitigate the visual impact. Response: The Project designs are under review by the City of Everett, and have been designed to be consistent with goals of the LBD Plan and City of Everett Zoning Ordinance.

Boston Redevelopment Authority	
Boston-BRA– 11	Comment: To avoid visual clutter of the skyline and relate the signage to the scale of the building, maximum letter height should be no larger than 10′ -0″, particularly if the signage is illuminated. Response: The Project will be designed to comply with the City of Everett Zoning Ordinance and Bylaws.

Boston Parks and Recreation Department	
Boston-BPR– 1	Comment: This significant volume of future development proposed for Sullivan Square needs to be included in the Wynn background analysis, in order to accurately assess the project's impacts on this neighborhood in terms of traffic congestion, increased traffic volume, decreased accessibility to open space and meso-scale air quality. Response: The future development in Sullivan Square was included in the background traffic growth rate for the area.

City of Medford Office of Community Development	
Medford-CD – 1	Comment: The SFEIR provides some additional information regarding concerns raised in the review of the FEIR. However, serious concerns still exist relative to the Exit 31 Southbound off-ramp from Route 93 and the surrounding intersections at Harvard Street/Mystic Valley Parkway (Route 16) and Mystic Avenue (Route 38). All indications are that this area will degrade beyond the existing LOS F and the congestion may result in its backup onto Route 93. Additional study and mitigation beyond signal timing is necessary to mitigate adverse impacts. Response: The Proponent has developed additional mitigation at these locations to improve congestion. These improvements are detailed in Section 3.4, pages 3-10 through 3-16.
Medford-CD – 2	Comment: Wynn commits up to $1.5 million dollars toward design costs for a design of a grade separation at Wellington Circle. This proposed mitigation provides neither a time schedule for the commencement of study and design, a pledge of an exact amount of funds, nor a structure for

City of Medford Office of Community Development	
	the coordination of this effort, which includes the MBTA, DCR, MassDOT, Cities of Everett and Somerville as well as Medford and private property owners. A well funded strategy should be created with a plan for implementation of parts of the project prior to the opening of the Casino. It must be clear that the City of Medford will not support an elevated roadway in this area nor a design that adversely affects residents and businesses. Response: The Proponent will work closely with all stakeholders to establish a process for the coordination of a study promptly following the conclusion of the MEPA process. The Proponent has committed to fund the design costs, up to $1.5 million and will make such payments in accordance with the terms of an agreed upon design contract.
Medford-CD – 3	Comment: The amount of funds [for Wellington Circle] is not sufficient to ensure a proper design. What is the proposed source of the balance of funds? The Casino will have adverse impacts within the City of Medford. The Commonwealth does not have sufficient funds to address these infrastructure needs. The Proponent must be required to resolve these issues prior to receiving approvals or occupying the building. Response: The Proponent's share of the design costs ($1.5 million) was negotiated with the City of Medford and set forth in the Surrounding Community Agreement between the City of Medford and the Proponent. While the total design costs have not yet been determined, to the extent that the $1.5 million contribution by the Proponent is not sufficient, the Proponent will work closely with the City of Medford and other interested stakeholders to investigate other funding sources (including, for example, the Community Mitigation Fund and other private developers within the region).

Melrose Pedestrian and Bicycle Advisory Committee – Steve Leibman	
Melrose PBMA – 1	Comment: There should be a strict requirement that construction be performed to extend the Northern Strand Community Trail from its current southern terminus to pass under Route 16 and connect to the site of future paths along the Mystic River, with easy access to the Alford Street (Route 99) bridge and to the site of a proposed ped/bike bridge over the Mystic River. Response: The Proponent agrees that an extension of the NSCT to the

Melrose Pedestrian and Bicycle Advisory Committee – Steve Leibman	
	Mystic River would be extremely beneficial to the Project as well as its neighbors and surrounding communities. The City of Everett is working with the MBTA, the DCR, and advocacy groups such as Bike to the Sea, the Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens.
Melrose PBMA – 2	Comment: [The SFEIR commitment to DCR to fund a study for a pedestrian/bike bridge] should be changed to specify the measurable completion of a meaningful task. In particular, we suggest that the required deliverable be a 75% design of the ped/bike bridge. Response: The Proponent has made a commitment to work with DCR and interested stakeholders to identify feasible options for addressing a pedestrian/bike crossing once a study has been initiated with the funding provided by the Proponent.
Melrose PBMA – 3	Comment: The design currently suggested for Sweetser Circle includes signage directing cyclists to dismount and walk their bikes on the sidewalk. These directions are unlikely to be followed in practice, and are in conflict with two Massachusetts laws (M G.L. I.XIV.90E.2A and M.G.L,I,XIV.85.11b). Bicycle accommodations must be made for the full circle, including the bridges that pass over the MBTA train tracks just south of the circle. Signage directing cyclists to dismount is not an acceptable method for accommodating bicycle traffic. Response: The Proponent will continue to refine the design of Sweetser Circle, working with the City of Everett, MassDOT, DCR, and the advocacy community.
Melrose PBMA – 4	Comment: Physically separated cycle tracks or bike lanes with a width of at least 5 feet should be provided on all roadways, including the bridges over the MBTA lines just south of Sweetser Circle. Sharrows should be provided in addition to cycle tracks or bike lanes, in order to combat the perception that cyclists are restricted to the bike lanes. Response: The Proponent will continue to refine the design of Sweetser Circle, working with the City of Everett, MassDOT, DCR, and the advocacy community.

Melrose Pedestrian and Bicycle Advisory Committee – Steve Leibman	
Melrose PBMA – 5	Comment: The intended speed in the circle, and the speed used for traffic throughput models is 15 MPH (see page 95 of SFEIR Volume I). However, the lanes widths and other design details currently assume a much higher design speed. This is inappropriate and unsafe. The design should include traffic calming measures to encourage travel at the 15 MPH speed used in the models. There must be raised crosswalks providing connectivity for the sidewalks across all roadways entering and exiting Sweetser Circle. There should be Rectangular Rapid Flash Beacons triggered by push-button for pedestrians. Response: The Proponent will continue to work with the City of Everett, MassDOT, DCR, and the advocacy community to refine the design of Sweetser Circle so that it is safer for all users.
Melrose PBMA – 6	Comment: We would support a plan to close the entrance from Bow Street to Route 99 north (just south of Sweetser Circle), this would require through traffic from Bow Street to execute a 90 degree turn using Bartlett Street. Response: This suggestion has also been made by the City of Everett. The Proponent will work with the City of Everett to incorporate this suggestion if appropriate as the design of Broadway (Route 99) progresses.
Melrose PBMA – 7	Comment: On Route 99 between the Alford Street Bridge and Sweetser Circle, there are frequent collisions between motor vehicles and pedestrians (source: MassDOT crash data) and between motor vehicles and bicycles (source: observation), In order to combat the increased likelihood of these collisions with increased traffic volume, the bike lanes should be painted solid green at high conflict intersections, as per the NACTO guidelines that were endorsed by MassDOT in April 2014. Locations should include southbound crossings of Bowdoin Street, retail parking lots, and the revised entrance to the Wynn property, along with northbound crossings of the southwest end of Bow Street, Lynde Street and Thorndike Street. Response: The Proponent will consider this suggestion as the design of Sweetser Circle progresses. The Proponent will continue to work with the City of Everett, MassDOT, DCR, and the advocacy community to ensure that the design provides safe travel for all users.

Somerville Bicycle Advisory Committee	
Somerville – BAC – 1	Comment: An Alternatives Analysis study of a Mystic River crossing has already been performed, having been commissioned by the Department of Conservation and Recreation in 2009... Therefore the $250,000 should begin where this report ended and included the selection and 75% design of a crossing (not just "an investigation" and be designed for pedestrians and cyclists). This 2009 Report analyzed **at least four designs for a bicycle and pedestrian connection are feasible**, and all of them would cost approximately $6 million, or less than half of one percent of the casino's project cost. Response: The Proponent will work with the DCR and local organizations to identify the appropriate next steps to utilize the funding to optimize the identification of feasible solutions to develop a future Mystic River Crossing.

Mystic River Watershed Association	
MyRWA – 1	Comment: We are concerned however that ample dedicated parking be created for users of these public areas to ensure that access, as required under Chapter 91, is provided to these kinds of visitors. This class of visitor is not included in the parking analysis nor is it clear in the SFEIR how these issues will be addressed. We recommend that an analysis of the visitor parking issue be completed and, based upon this analysis, a sufficient number of parking spaces be made available at no cost to short-term visitors to the site whose purpose is to enjoy the public open space and pathways. Response: The peak patron parking demand for the Project is projected to be 2,360 spaces, which is below the proposed on-site parking supply of 2,930 spaces, indicating that more than sufficient parking will be available to accommodate projected demands with sufficient reserve capacity to accommodate parking for short-term visitors to the site whose purpose is to enjoy the public open space and pathways. In addition, it is unlikely that the peak patron parking demand for the Project will coincide with the visitation by short-term visitors whose purpose is to enjoy the public open space and pathways. Therefore, this will result in additional parking supply available to such visitors.

The Boston Harbor Association	
TBHA – 1	Comment: Such a connection [ferry shuttle service between the MBTA Assembly Station on the Orange Line and the project dock] could utilize smaller vessels than the customized ferry vessels to and from the Inner Harbor, and help reduce traffic congestion. We urge that the Secretary's Certificate have the proponent consider this alternative as a way to further reduce road congestion. Response: The connection by water between Assembly Square and the facility would not significantly reduce traffic congestion as patrons on the Orange Line that are currently planned to use a shuttle bus from Wellington to access the Project Site would use the water shuttle instead. However, it would provide an alternative means to access the facility from the Orange Line. The Proponent believes a better and more effective solution for the same route would be a pedestrian bridge over the Mystic River. In furtherance thereof, the Proponent has committed to provide $250,000 in funding for design and feasibility analysis.
TBHA – 2	Comment: As the Baker Administration continues its review of transportation needs for the Great Boston area, we strongly urge that the fare for the water transportation service be more in line with that of MBTA ferry service, and especially if parking rates are relatively low (no information is provided in the Supplemental FEIR on proposed parking rates). Response: Rates for the Project's water transportation services will be consistent with other water transportation services operating within the Boston Harbor. The Proponent will monitor the use of the water transportation and will adjust rates, as necessary, to promote ridership.
TBHA – 3	Comment: The Supplemental FEIR is not clear with regards to the project's water transportation fares relative to those of the MBTA, nor whether its ridership numbers (6% of visitors coming by water transportation) is based on a fare structure similar to that of the MBTA Response: Rates for the Project's water transportation services will be consistent with other water transportation services operating within the Boston Harbor. The Proponent will monitor the use of the water transportation and will adjust rates, as necessary, to promote ridership.
TBHA – 4	Comment: Based on 2015 MBTA information about funding needs to maintain a viable transportation system, we ask that the mitigation measure outlined on page 3-19 include the annual $3,303,000 baseline cost plus an

The Boston Harbor Association	
	annual increase based on the Consumer Price Index. Response: The Proponent is committed to providing the water shuttle service, not the particular annual cost.
TBHA – 5	Comment: We strongly support the on-going monitoring of transportation commitments by an independent organization. Response: The Transportation Monitoring and Reporting Program will be undertaken by an independent third party that is qualified to conduct the required monitoring program and is an approved vendor of the Massachusetts Gaming Commission. The monitoring agent will also be approved by the Proponent who will be contracting directly with the agent.
TBHA – 6	Comment: [I]f the results of the transportation monitoring and reporting program indicate that there are operational deficiencies at the monitored locations and various traffic volume conditions are met, we ask that the corrective measures to be undertaken also include further enhancements to the water transportation system. Response: The corrective measures defined in the Transportation Monitoring and Reporting Program includes additional measures and incentives to encourage use of public transportation, inclusive of the water transportation system.
TBHA – 7	Comment: Figure 1-16 of the Supplemental FEIR appears to have the public cross lanes of roadway to access the front of the building and to access the public rest rooms and retail spaces. Safe access for those walking along the HarborWalk and/or enjoying the public open spaces or coming from the boat dock to the entrance of the building is key. Response: The Project will include safe, pedestrian oriented crossing points for connections to the Harborwalk.
TBHA – 8	Comment: [W]e urge that the Secretary's Certificate have the proponent engage in district planning for sea level-rise. Response: The Project is on the forefront of planning for resiliency in the face of sea level rise. The living shoreline and elevation of first floor spaces well above the current 1% return storm event demonstrates the commitment of consideration of sea level rise. The Proponent would be willing to participate in district level planning for sea level rise, and sharing

The Boston Harbor Association	
	the information and knowledge gained from its experience in designing this Project.

Greenman – Pedersen, Inc.	
GPI –1	Comment: While the SimTraffic modeling indicates a noted reduction of the potential vehicle queuing along critical off-ramp from I-93 from previously reported values, any increase in traffic to this already failing movement could have a significant compounding effect. Response: Proposed signal timing and phasing changes presented in the SSFEIR, Section 3.4, pages 3-10 through 3-16, further reduce projected queues on the I-93 off-ramp in the Build with Mitigation Conditions to levels similar to or lower than reported for the No Build Conditions.
GPI –2	Comment: At best these signal timing adjustments accommodate the project related traffic exiting I-93 to access the project site to the detriment of the South Medford neighborhood. At worst these improvements are insufficient to accommodate the project impacts resulting in regional mobility concerns to I-93 southbound while still having a significant detrimental effect to South Medford. Response: The SSFEIR incorporates a signal timing and phasing change from the SFEIR at the intersections of Harvard Street/Mystic Valley Parkway (Route 16)/Mystic Avenue and Mystic Valley Parkway (Route 16)/Route 16 Connector. This change creates marked improvements to overall LOS at the intersections compared to No Build Conditions, as well as significant improvements for vehicles traveling west from Mystic Valley Parkway (Route 16) traveling through to Harvard Street and turning right onto Mystic Avenue; delay for vehicles turning left from Mystic Avenue southbound onto Mystic Valley Parkway (Route 16) are also greatly reduced. Operations for other movements are largely unchanged, except for an increase in delay for Mystic Valley Parkway (Route 16) westbound vehicles turning left onto Mystic Avenue.
GPI –3	Comment: It is also unclear how any recommended improvements as a result of the Road Safety Audit would be implemented. Does the proponent commit to implementing any identified improvement needs as part of this process?

Greenman – Pedersen, Inc.	
	Response: The Proponent will evaluate the recommendations from the RSA process and work with MassDOT to identify funding sources.
GPI –4	Comment: It is the opinion of GPI that the benefits of the additional capacity proposed by the proponent to offset these impacts [at Wellington Circle] may be overstated as reported in the SFEIR. The additional lanes will be added to an already exceptionally wide roadway cross-section. The utilization and effectiveness of these lanes will be limited by the overall congestion of Wellington Circle and upstream and downstream constraints. Response: The Proponent's analysis demonstrates that the short-term capacity improvements at Wellington Circle will mitigate its impacts.
GPI –5	Comment: While this is a noted commitment [up to $1.5 million for long-term study of Wellington Circle], given the magnitude of the infrastructure needs at this location, this amount will likely be insufficient to fund the complete roadmap needed to plan for the ultimate grade-separated solution, which both the City of Medford and GPI consider to be appropriate. Response: The Proponent's share of the design costs ($1.5 million) was negotiated with the City of Medford and set forth in the Surrounding Community Agreement between the City of Medford and the Proponent. While the total design costs have not yet been determined, to the extent that the $1.5 million contribution by the Proponent is not sufficient, the Proponent will work closely with the City of Medford and other interested stakeholders to investigate other funding sources (including, for example, the Community Mitigation Fund and other private developers within the region).
GPI –6	Comment: The SFEIR also indicates a VISSIM model was completed for Wellington Circle, however no output data was provided. In order to provide a comprehensive review of this location GPI requests this model be provided. Response: Section 3.4 of this SSFEIR provides more detail regarding the VISSIM model for Wellington Circle. The VISSIM model results are included in Appendix E.
GPI –7	Comment: The SFEIR states that the Proponent has confirmed with the operators that sufficient capacity is available at the potential lease locations [for off-site employee parking], though no documentation has been

Greenman – Pedersen, Inc.	
	provided regarding the parking at Station Landing. Response: The Proponent is in the process of negotiating the leases for off-site employee parking, which includes potential use of parking at Station Landing. The disposition of parking between the identified facilities will be dependent on the available parking at each facility and structured so as to not displace current and projected future parking requirements at each facility. The owner and operator of the Station Landing parking facility has indicated that excess parking is available for use by the Proponent for employee parking.
GPI –8	Comment: [N]o vehicular traffic impact associated with the employee off-site parking locations were analyzed in the SFEIR. While 4:30 – 6:00 PM may be the critical evening peak period, these roadways experience noted congestion for a much broader period of time. Not understanding the impacts this additional employee traffic may impose on the local roadway network within the City of Medford during these periods potentially masks additional impacts. It is requested that a more thorough analysis of this traffic analysis be presented even if it represents an off-peak condition (6:00 – 7:00 PM or 3:30 – 4:30 PM). At a minimum the expected peak period employee trip generation and distribution should be documented as it relates to the City of Medford. Response: The analyses in the SFEIR reflect travel made to the employee off-site parking locations. Automatic Traffic Recorder (ATR) counts taken by the Assembly Row project (EEA #13989) for its NPC indicate that traffic volumes are lower on the Fellsway (Route 28) before 4 p.m. and after 6 p.m. These data are provided in Appendix E.
GPI –9	Comment: Still outstanding however is the need to include physical mitigation to offset Project impacts should the need be identified by the traffic monitoring program. As currently proposed the Proponent states that should results of the traffic monitoring program indicate that measured traffic volumes exceed 110% of projected values or project distribution varies by more than 10% of assumed values the Proponent will undertake corrective measures. These measures however include what GPI would consider "soft" correct measures, such as signal timing optimization and Transportation Demand Management programs. Response: If there are operational deficiencies, it is in the Proponent's best interest to correct them. The gaming legislation requires the Proponent to correct any traffic issues related to the Project, including funding the necessary improvements. Mitigation actions are not limited to simple

Greenman – Pedersen, Inc.	
	changes such as signal timing modifications, but could include larger infrastructure projects or incentives to increase use of non-auto modes. Although the Proponent believes that it has identified an appropriate off-site transportation mitigation package in addition to a robust TDM program, any additional changes would be its responsibility as required by the legislation.
GPI –10	Comment: Given the magnitude of this Project, GPI strongly recommends that at a minimum a large scale, grade-separated improvement plan be developed now so that it may be implemented in a timely manner should the traffic at this key location [Wellington Circle] become untenable in the future, allowing for a proactive rather than reactive plan. Response: The Proponent has committed to funding for a study to determine the appropriate long-term solution.
GPI –11	Comment: The Proponent's traffic monitoring commitment should not preclude additional physical geometric corrective measures in the future should they be warranted. Response: See Response GP-9.

Liz Levin & Company	
LLC – 1	Comment: Thus the "interim plan" will not "fix" the Sullivan Square and Rutherford Ave.'s biggest problems. Therefore, the community will need implementation of the long-term transportation plan for RA/SS to realize the potential of this area. That plan will require City of Boston, MBTA, MassDOT, Mass. Gaming Commission and Wynn co-operation and leadership. I ask in your certificate of approval that you acknowledge that the interim plan is "interim" only and that you consider how best to require that a long term plan be in place to truly meet community goals and to mitigate more fully the Wynn plan impacts. Response: In the MassDOT Comment Letter, MassDOT requested the preparation of a second SFEIR for the purpose, in part, of enabling the City of Boston, the Proponent, the Massachusetts Gaming Commission ("MGC") and MassDOT to establish a process for the development of the long-term improvements for the Rutherford Avenue corridor. The SFEIR Certificate noted that such process would "require participation by the City [of

Liz Levin & Company	
	Boston], the Proponent, the MGC and MassDOT" and that the "success of this effort would be dependent on the active and constructive participation by all of the participants." Notwithstanding, the SFEIR Certificate observed that building consensus between the parties could pose a significant challenge given the litigation pending between the City of Boston and the MGC. As detailed in Section 3.21, following receipt of the SFEIR Certificate, MassDOT convened a meeting for the purpose of establishing a planning process for the development of long-term improvements for the Rutherford Avenue corridor. This meeting was attended by representatives from MassDOT, MEPA, Energy and Environmental Affairs, MGC, City of Everett, City of Somerville, and the Proponent. The City of Boston declined to attend the meeting. As of the date of this filing, despite the Proponent's efforts, the City of Boston has declined to participate in any new discussions regarding the long-term planning process for the Rutherford Avenue corridor. As the SFEIR Certificate observes, the long-term planning process is dependent on the active and constructive participation by all of the participants. At this juncture, the City of Boston has declined to participate thereby thwarting the efforts of the Secretary of Transportation and the stakeholders to advance the planning process. Notwithstanding, following the filing of this SSFEIR, the Proponent remains willing to meet with, or without, the City of Boston to advance the planning process and will continue to reach out to the City of Boston and other stakeholders and interested community members accordingly.
LLC – 2	Comment: I also request that you extend the monitoring period for the project to 10 years and require an extremely robust and flexible monitoring program that has opportunity for public input. Response: Pursuant to the terms of the gaming license issued by the Gaming Commission to the Proponent, the Proponent has agreed to work with the City of Boston to develop an mutually-agreed upon methodology for monitoring Project traffic in Sullivan Square.

Frederic Salvucci

Frederic Salvucci	
MIT – 1	Comment: The most credible method to produce future projections of traffic and transportation conditions is to use the regional traffic model maintained by the CTPS, a state agency. Response: The April 5, 2015, EOEEA Secretary's Certificate on the Proponent's SFEIR stated (on page 11) that "the SFEIR includes an updated transportation study prepared in conformance with the EEA/MassDOT Transportation (TIA) Guidelines. The study includes a comprehensive assessment of the transportation system in the project area based on a thorough analysis of existing and future conditions." While useful for evaluating regional travel patterns associated with land use and population trends, or large-scale transportation improvements, such as new regional highways (Central Artery Tunnel Project) or new major transit services (Green Line Extension), regional travel demand models are much less effective and too labor intensive to adopt for a traffic impact study of a single private development. MassDOT approved the Project team's methodology for assessing the traffic impacts associated with the Project and have not requested use of the CTPS regional travel demand model. It is interesting to note that other major projects in the area (such as the Assembly Square development in Somerville, which when complete will generate 15% more daily vehicle trips than Wynn Everett) have not been required to use CTPS's regional travel demand model to assess traffic impacts.
MIT – 2	Comment: The impact upon the already severely congested facilities of a major new traffic generator such as the proposed casino, in a real world context of growth in traffic generation from other major new development now underway can only be understood using the CTPS transportation model. Response: Please see the Proponent's response to MIT-1. Vehicle trips associated with other major development in the study area were accounted for in the traffic impact process adopted (and approved by MassDOT) by the Project team.
MIT – 3	Comment: The proposed access road from the proposed casino site to Route 99 needs to be understood in terms of the constraints it will create for existing and future essential MBTA maintenance needs.
	Response: The Proponent has worked in consultation with MassDOT and

Frederic Salvucci	
	the MBTA on plans for the relocation of the MBTA Everett Shops entrance and the construction of a new entrance to the MBTA Everett Shops and an access road to be shared by the Proponent and the MBTA as described in Section 1.2.3 of the SFEIR.
MIT – 4	Comment: The SFEIR looks only at how prospective casino users may use public transportation or their autos to access the site, but not at the public policy question of how the proposed new casino access pressures will affect the delivery of public transportation and roadway service for everyone else. Response: The DEIR, FEIR, and SFEIR presented detailed analysis of impacts to the public transportation services and the roadway system. The number of existing users, future users unrelated to the Project, and new users generated by the Project are all incorporated into the impact analysis. All existing and future users of the public transportation and roadway system are accounted for in the Project transportation analysis. As presented under the response to comment MIT-1, above, the April 5, 2015, EOEEA Secretary's Certificate on the SFEIR stated (on page 11) that "the SFEIR includes an updated transportation study prepared in conformance with the EEA/MassDOT Transportation (TIA) Guidelines. The study includes a comprehensive assessment of the transportation system in the project area based on a thorough analysis of existing and future conditions."
MIT – 5	Comment: Rather than seeing these public transport access possibilities as supplementary to an auto oriented facility, the casino should be required to consider a zero auto access option that takes advantage of the public transport opportunities, and avoids any worsening of the precarious automobile network in the area. Response: The transportation impact assessments are based on travel mode shares – the percentage of person trips assigned to each of the available travel modes serving the Project Site – that have been used to establish quantitative non-SOV goals for both Project patrons and employees. MassDOT has concurred with both the methodology used to develop these travel mode shares and the resulting alternative travel mode goals. To achieve these goals, the Proponent is committed to implementing strong TDM measures described in detail in Section 4.16 of the FEIR and summarized in Section 2.7 of the SFEIR. A robust transportation monitoring

Frederic Salvucci	
	and reporting program, as described in the FEIR and updated in Section 2.7 of the SFEIR, will evaluate and reinforce employee and patron travel behavior consistent with the alternative travel mode goals.
MIT – 6	Comment: [The Proponent should consider] [t]he possibility of a dramatically smaller facility with less than half of the proposed parking. Response: The Project has identified an optimal program to meet the requirements of the Category 1 Gaming License and justify the investments made in the Project by the Proponent.
MIT – 7	Comment: [The Proponent/Gaming Commission should consider] [t]he possibility of a different site at Suffolk Downs, or Wonderland. Response: This suggestion is not within MEPA jurisdiction.
MIT – 8	Comment: [The Proponent/Gaming Commission should consider] [t]he Possibility of No Eastern Massachusetts major casino, providing the approved Springfield site with essentially an exclusive situation that would be much more robust in the uncertain environment of casino viability. Response: This suggestion is not within MEPA jurisdiction.
MIT – 9	Comment: What needs to be recognized is that the adverse transportation impacts of the proposed Everett/Boston site are not mere annoyances. They threaten the economic viability of major economic initiatives underway nearby at Assembly Mall in Somerville, North Point, Kendall Square in Cambridge, and in Charlestown and elsewhere. Response: The purpose of performing a traffic impact analysis for the Project and each of the projects cited above is to understand how the additional traffic will affect traffic conditions. For example, traffic from the Assembly Square development (a project that when complete will generate more daily vehicle trips than the Project) has been accounted for in the Project analysis. See page 4-13 of the FEIR for a list of background projects incorporated into the Project transportation analysis.
MIT – 10	Comment: Promising to spend money to implement a plan which will reduce the capacity of Sullivan Square in no way "mitigates" the severe adverse consequences of the proposed casino at Sullivan Square in Boston. Response: While the proposed mitigation adequately responds to the

Frederic Salvucci	
	Project's impacts, the Proponent will continue to work with stakeholders to address a long-term solution to regional transportation concerns.
MIT – 11	Comment: Proposing to contribute to an unspecified plan to improve the problems at Wellington circle, a severe problem with no known solution, in no way mitigates the adverse impacts that the proposed Everett/Boston casino would cause. Response: As noted the Proponent will contribute $1.5 million toward a study of long-term improvements to address existing deficiencies at Wellington Circle. To address both current and projected future operational deficiencies, the Proponent has collaborated with MassDOT on a plan to optimize traffic signal timing and phasing and make certain geometric improvements within the existing public right-of-way. The April 5, 2015, EOEEA Secretary's Certificate on the SFEIR stated (on page 17) that "MassDOT comments indicate that it supports the proposed interim mitigation and that the study is necessary to address effective alternatives for addressing existing operational deficiencies."

Bike to the Sea, Inc.	
B2C – 1	Comment: The project and off-site work as described in the Supplemental Final EIR does continue to present significant, unmitigated adverse impacts by eliminating existing, critical, on-road bicycling connections at Sweetser Circle and increasing traffic volumes that will discourage walking and bicycling in this area. Response: The SFEIR presented a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
B2C – 2	Comment: To address the adverse impacts of additional motor vehicle traffic around the project area that will discourage walking and bicycling, Bike to the Sea, Inc. requests that Wynn, the City of Everett, the MBTA and

Bike to the Sea, Inc.	
	the owners of the Gateway Shopping Center provide firm and defined commitments to design and build the ½ mile extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets in Everett to the Mystic River within 5 years. We propose inclusion of a Chapter 61 finding requiring funds be committed to the design of this extension and that the 75% design be developed prior to project opening. Response: The Proponent agrees that an extension of the NSCT to the Mystic River would be extremely beneficial to the Project as well as its neighbors and surrounding communities. The City of Everett is working with the MBTA, the DCR, and advocacy groups such as Bike to the Sea, the Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens.
B2C – 3	Comment: The proposed design of Sweetser Circle presented in the supplemental FEIR has significant adverse impacts to existing regional on-road bicycling connections. Multiple regional bicycle routes lead into Sweetser Circle and down Lower Broadway to reach the Alford Street bridge, the first and most direct connection to Boston for bicyclists riding to and from Everett and other communities north and east of the Mystic River. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle. The City of Everett is coordinating with the MBTA and DCR on extending the NSCT to the south under Route 16.
B2C – 4	Comment: Finally, we note that changes to the Wellington MBTA Station appear to eliminate the most convenient bicycle parking at that site. Any bicycle parking impacted at that location needs to be replaced at a location at distance equal to or closer than the parking that is removed. Response: The Proponent will work with the MBTA to ensure that any displaced bicycle parking is replaced in a similarly accessible location. The

Bike to the Sea, Inc.	
	Proponent understands that Project employees and patrons may choose to bicycle to Wellington Station as a means to access the Project Site, and recognizes the importance of maintaining sufficient, accessible, and convenient bicycle parking spaces.

Gardens for Charlestown, Inc.	
GFC – 1	Comment: We do not believe the Wynn SFEIR presents an accurate estimate of traffic increases in Sullivan Square resulting from their proposed development and does not address the potential impacts of increased vehicular congestion on the sustainability of our community garden. Response: The trip generation methodology was developed in coordination with MassDOT, who has approved the methodology. The Proponent will be providing incentives to use the water shuttle system, which will be convenient for patrons and employees on all public transportation lines.
GFC – 2	Comment: The proponent should have analyzed the effect of a range of transportation mode shares with 29% non-auto use representing the best case scenario. Response: The trip generation rates and underlying assumptions are summarized in the SFEIR, Chapter 2, Table 2-7, and are consistent with MassDOT/Green DOT mode shift goals, and the Metrofuture Regional Plan. MassDOT has approved the underlying methodology and approved the use of the travel mode shares contained therein. The mode share analysis indicates that 29% of casino patrons and 59% of casino employees are projected to arrive via a non-SOV mode.
GFC – 3	Comment: The mitigation measures presented to date do not address the potential new traffic that will be generated, should the mode share assumptions be overly optimistic. Response: The trip generation methodology was developed in coordination with MassDOT, who has approved the methodology. The Proponent will be providing incentives to use the water shuttle system, which will be convenient for patrons and employees on all public transportation lines.
GFC – 4	Comment: Gardens for Charlestown is also concerned about the significant amount of contaminated soils that will be transported off the site during the

Gardens for Charlestown, Inc.	
	construction of the Wynn project. If these soils are transported over local roads there are potentially significant negative impacts from the release of noxious chemicals into the air and ultimately impacting the soil of the community garden. Response: Trucks removing soil from the Project Site will be directed to follow Route 99 south to Route 93, or Route 99 north to Route 16 west to Route 93. Trucks will be covered to prevent the escape of dust during transit, but in any case will not be using local roads.

Livable Streets Alliance	
LSA – 1	Comment: The design contradicts the requirements of Massachusetts law that allow bicyclists to use the roadways of the Commonwealth, fails to provide "all reasonable accommodations" for bicyclists and pedestrians, and is inconsistent with Department of Conservation and Recreation's core mission and trust over property it holds to provide healthful recreation for citizens of the Commonwealth. Response: The SFEIR presents a bicycle accommodation through Sweetser Circle that connects to the NSCT. While bicyclists will still be permitted to use the roadway as they do today, the proposed accommodations are intended to accommodate novice and intermediate cyclists in a similar way that modern roundabout designs often do. The Proponent believes that this accommodation, combined with a possible extension of the NSCT, will provide adequate bicycle accommodations through the complex rotary at Sweetser Circle.
LSA – 2	Comment: If lane width design exceptions cannot be secured, mitigation requires the construction of a bridge over the MBTA rail line to accommodate bicyclists traveling north from Lower Broadway. Response: The Proponent will continue to work with MassDOT, DCR, the City of Everett, and the advocacy community to develop detailed design for Lower Broadway (Route 99).
LSA – 3	Comment: Route 99 and all connecting roads affected by this project should be designed with Complete Streets frameworks. Response: The design of Broadway (Route 99) as presented in the SFEIR

Livable Streets Alliance	
	retains existing bicycle lanes while providing improvements for the three popular bus routes that run along the roadway. Bus stops will be moved to the far side of signalized intersections, as preferred by the MBTA, and bus shelters will be provided where sidewalk widths are sufficient. Complete Streets frameworks were applied as much as possible along the other roadways, including providing bicycle lanes along Cambridge Street in Charlestown.
LSA – 4	Comment: Any bicycle parking impacted at that location [Wellington MBTA Station] needs to be replaced at a location at distance or equal to or closer than the parking that is removed. Response: The Proponent will work with the MBTA to ensure that any displaced bicycle parking is replaced in a similarly accessible location. The Proponent understands that Project employees and patrons may choose to bicycle to Wellington Station as a means to access the Project Site, and recognizes the importance of maintaining sufficient, accessible, and convenient bicycle parking spaces.

Rutherford Avenue/Sullivan Square Advocacy Group	
RA/SS – 1	Comment: [W]e are convinced the current configuration of Sullivan Square, including Wynn's promised mitigation, will not accommodate Wynn and regional traffic increases. Response: The analysis contained in the Proponent's prior filings indicates that the proposed mitigation will accommodate both the Proponent's traffic as well as other planned developments. The Proponent's mitigation is intended to be an interim measure, the gateway to a long-term improvement for Sullivan Square and Rutherford Avenue. The Proponent looks forward to working with MassDOT and the cities of Boston, Everett, and Somerville to advance the long-term solution for Sullivan Square.
RA/SS – 2	Comment: Their (the Proponent's) proposed mitigation, said to be accepted by BTD, fails to address the bottleneck at the Sullivan Square intersection with Rutherford Avenue and Main Street where two lanes on the traffic circle must accommodate merging very heavy rush hour and casino peak hour traffic. It is not possible to resolve the bottleneck because the Sullivan Square

Rutherford Avenue/Sullivan Square Advocacy Group	
	infrastructure narrows the circle at Rutherford and Main, and forces all traffic for Charlestown, Everett and points northwest through the same two congested traffic lanes. Response: The VISSIM analysis of Sullivan Square indicates that the Proponent's mitigation will reduce the delay and queuing on Rutherford Avenue and Main Street. For more detail, see response to comment BTD-3 of this SSFEIR, pages 5-56 through 5-62.

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
CLCT – 1	Comment: These streets [Bowdoin Street and Charlton Street] currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic. Response: No Project traffic is expected to use Bowdoin Street. The Proponents' shuttle drivers and commercial deliveries will utilize the improved intersection at Beacham Street/Broadway (Route 99). The Proponent is working with the City of Everett to design the extension of Charlton Street to discourage other non-Project traffic from using Charlton and Bowdoin streets.
CLCT – 2	Comment: While the drive aisles [in the Condominium parking lot] are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic. Response: No Project traffic will use private property to access Bowdoin Street or Charlton Street. The Proponents' shuttle drivers and commercial deliveries will utilize the improved intersection at Beacham Street/Broadway (Route 99). The Proponent is working with the City of Everett to design the extension of Charlton Street to discourage other non-Project traffic from using Charlton and Bowdoin streets.
CLCT – 3	Comment: Currently, daily [MBTA worker] shift change traffic using the Charlton Street MBTA access gate, queues up for multiple city blocks in length, causing significant traffic congestion and access problems for our community. Moving the primary gatehouse half-mile closer will make this

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
	congestion worse. Response: The new service driveway that will be located opposite Beacham Street on Broadway (Route 99) will provide access to the MBTA Everett Shops facility, which will discourage employees from cutting-through on local streets and will operate at an acceptable LOS. The Proponent is working with the City of Everett to design the extension of Charlton Street to discourage other non-Project traffic from using Charlton and Bowdoin streets.
CLCT – 4	Comment: Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway? Response: Robin Street and Dexter Street will serve as the truck route for the area. The Proponent will provide full-depth reconstruction of these roadways to accommodate heavy vehicles.
CLCT – 5	Comment: The aesthetic efforts and green space shown in the SFEIR plans focused primarily on the Boston facing entrance – which appears to be well done and quite stunning. It is disappointing that the areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings. Very little landscaping and green space is shown in the plans facing Everett. Response: The Proponent continues to work with the City of Everett to ensure that the Project provides plantings and screening at appropriate locations.
CLCT – 6	Comment: As stakeholders in the Lower Broadway District, the Board would like to be included on all abutter notices for the casino project. Response: The Project will comply with all regulations regarding abutter notifications. Local community groups, stakeholders, and citizens are encouraged to e-mail the Proponent team at Everett@wynnresorts.com for information, or to request an in-person meeting. The City of Everett will soon begin holding monthly update meetings at City Hall. Members of the public can sign up for the Massachusetts Gaming Commission e-mail list to receive meeting notices and agendas, public hearing notices, press releases, and newsletters.

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
CLCT – 7	Comment: Our Condominium... would like to see the "Bike to the Sea" path extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. Response: The Proponent has proposed bicycle improvements to Sweetser Circle and Lower Broadway (Route 99) that will improve the overall safety of cyclists accessing these locations and the Project Site. Bicycle lanes will be maintained along Lower Broadway (Route 99) and a shared use path will be located on the northwest side of the Sweetser Circle rotary. Additionally, the Project will include a shared-use path intended to provide continuous bicycle and pedestrian access along the waterfront and, pending discussions and agreement with DCR, this path will connect to DCR's Gateway Park.
CLCT – 8	Comment: We would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. We would like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in our neighborhood. Response: The Project will have the entire exterior of the property covered by security cameras. Those cameras will be connected to and monitored 24 hours per day by the Project's Security Operations Center. For any suspicious or criminal activity discovered, the Project's Security Team will contact law enforcement representatives for investigation and possible action. The Proponent will have State Police Officers located on site for immediate response, if necessary. The Everett Police Department will handle any criminal activity outside of our property. The Host Community Agreement provides funds that could be used to support cameras and staffing as needed by the Everett Police Department.
CLCT – 9	Comment: We request and support the addition of a police and fire substation in this district. Response: The Proponent would support the addition of a Police and/or Fire substation in this district and has signed a Host Community Agreement that provides funds that could be used for this purpose if the City of Everett

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
	determines that it is a priority.
CLCT – 10	Comment: It appears the Condominium property will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street. Response: The site at 3 Charlton Street currently occupied by warehouse and manufacturing uses has been purchased by an affiliate of the Proponent. The site is currently envisioned to be used to accommodate the service road and potentially some support functions. The service road will provide access to the back-of-house area of the Project, as well as the back entrance to the MBTA Everett Shops facility. The road will be on the south side of the site, away from the residential neighbors. The Proponent has had a series of productive meetings with the apartment and condominium stakeholders and the City of Everett to discuss the site and roadway network, including if Charlton Street should remain two-way traffic or be converted to one-way. The Proponent is supportive of either option and will work with the group to investigate the advantages of both. The site will be attractive and a landscape buffer will be discussed with the abutters to determine locations where it is desired and can be installed.
CLCT – 11	Comment: How will disruption from service traffic, truck impacts (i.e. engine noise, idling odors, loading dock noise, reverse back-up signal beacons, wear and tear from heavy oversized vehicles) be remediated? During construction as well as long term, how will our property be protected from disruption and impacts? Response: Any noise from truck traffic on or near the service road and loading area will be at normal decibel levels for that type of operations, such as is experienced on the adjacent Route 99, Sweetser Circle, and Route 16 (Revere Beach Parkway). It will be less than the frequent train traffic on the adjacent commuter rail line. Efforts will be made to reduce any truck idling to minimize both noise and exhaust.
CLCT – 12	Comment: Will the volume of service traffic on the access road require trucks to queue up and idle? What hours will deliveries occur? What will be the speed at which semi-tractor trailers will be traveling along this

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
	service road? How many truck trips are required each day? Response: Appendix B of the SFEIR contains the projected truck trip generation rates and projected trips for the Project. Applying the Central Artery/Tunnel project area truck trip generation rates, the Project is anticipated to generate 33 daily light truck arrivals, and only 9 medium/heavy truck arrivals.
CLCT – 13	Comment: Will service access road traffic be restricted to protect normal, residential use of Charlton and Bowdoin streets? Response: Robin Street and Dexter Street will serve as the truck route to and from the Project Site. The Proponent will provide full-depth reconstruction of these roadways to accommodate heavy vehicles. To discourage general vehicular traffic using the service roadway, "authorized vehicle" signage will be installed.
CLCT – 14	Comment: Are there remediation methods that can be implemented [for noise impacts]? Response: Chapter 12 of the FEIR included information regarding noise impacts and mitigation measures during construction. During operation, the Project will be subject to local oversight regarding noise.
CLCT – 15	Comment: Will any new construction impact the investment in this [newly installed] drainage work? Will the public system still be able to accommodate the storm water volume? The board would like to have plans, including storm water calculations provided to our civil engineer for review and comment at such time the plans are presented for consideration and approval to the City of Everett in order to commence construction. Response: Stormwater from the Project is not proposed to impact the City of Everett storm sewer system. Stormwater calculations will be provided in the Notice of Intent and have been included in the City of Everett Site Plan Review submittals. The Site Plan Review application is available at the City of Everett's Planning Office.
CLCT – 16	Comment: Will there be a substantial buffer screening the view between this service road and these homes? Response: The Proponent will work with the City of Everett and the community to ensure that adequate screening and buffers are provided. A

Charleston Lofts Condominium Trust (and 23 residents thereof with similar comments)	
	landscape buffer will be discussed with the abutters to determine locations where it is desired and can be installed.

Charlestown Mothers Association	
CMA – 1	Comment: That mitigation [for Cambridge Street, Maffa Way, and Main Streets], which we understand may have been accepted by BD, fails to address the bottleneck at the Sullivan Square (SS) intersections with Rutherford Avenue (RA) and Main Street where there is already a gridlocked rush hour, without the addition of casino peak hour traffic. Response: The VISSIM analysis indicates that the Proponent's mitigation does improve delay and queuing slightly on the Rutherford Avenue and Main Street approaches to the rotary. The VISSIM analysis is provided in Appendix D.
CMA – 2	Comment: In that planning [for Sullivan Square], we strongly encourage consideration of providing access to Wynn Everett via an off-ramp from Rt. 93 in Everett, rather than through Sullivan Square and Charlestown or an on-ramp from Charlestown to 93 North (which is already partially created). Response: The Proponent looks forward to working with the City of Boston, MassDOT, MBTA, and the MGC, as well as the community to determine the best regional solution for Sullivan Square.

East Coast Greenway Alliance	
ECGA – 1	Comment: The ECGA requests that Wynn, the City of Everett, the MBTA and the owners of the Gateway Shopping Center provide firm and defined commitments to design and build the half mile extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets in Everett to the Mystic River within 5 years. We propose inclusion of a Chapter 61 finding requiring that at least $200,000 be committed to the design of this extension and that a 75% design be developed prior to project opening. Response: The Proponent agrees that an extension of the NSCT to the Mystic River would be extremely beneficial to the Project as well as its

East Coast Greenway Alliance	
	neighbors and surrounding communities. The City of Everett is working with the MBTA, the DCR, and advocacy groups such as Bike to the Sea, the Livable Streets Alliance, the Somerville Bicycle Advisory Committee, and the Boston Cyclists Union to develop concepts for the extension of the NSCT. The City of Everett is optimistic that a feasible plan to extend the NSCT will be identified once field survey is completed, and that the design process can proceed before the Project opens.

DDR Corp	
DDRC – 1	Comment: In addition, it should be noted that VHB and DDR met with the City of Everett Mayor, City staff members, and representatives from the Wynn team on March 4, 2015. During that meeting VHB further explained concerns relative to the project's mitigation plan and its impacts on traffic operations abutting Gateway Center as presented in the SFEIR (VHB previously emailed the concerns to the Wynn team and followed up with a phone conversation to discuss the items in advance of the meeting with the City.) The Wynn team understood the concerns and planned to address them through a revised mitigation plan. The goal of the Wynn team was to submit a revised traffic analysis for the updated mitigation plan by Friday, March 13, 2015, which would give VHB and DDR 2 weeks to review prior to the March 27, 2015 MEPA deadline for comments. It was the hope of all parties that the DDR letter to MEPA would reference the updated mitigation plan (developed post SFEIR) and their support of the plan, instead of commenting on the issues raised in the SFEIR. Unfortunately, at the time this letter was prepared, the Wynn team was not able to provide an updated mitigation plan or supporting analyses, so our comments address only the material presented in the SFEIR. We acknowledge that the Wynn team is in the process of updating their proposed mitigation and we will work together with them to hopefully arrive at a solution that is acceptable to all the parties. Response: The Proponent has provided supporting analyses since filing the SFEIR, and will continue to refine the proposed design at Santilli Circle as it moves from permitting into a more robust design process. The Proponent will continue to work with the City of Everett, MassDOT, DCR, and the abutters to refine the design.

DDR Corp	
DDRC – 2	Comment: As cited in previous reviews, the SYNCHRO analysis only looks at traffic operations at the signalized intersections, ignoring the impacts associated with the other intersections on Santilli Circle. Therefore, the SYNCHRO results are not realistic or reasonable, and should not be used to measure the impact of the project on the Circle. Our review of the SYNCHRO analysis found one error; it was noted that the 2023 PM Build SYNCHRO analysis in the SFEIR uses the No Build volume of 1,480 vph for the westbound through traffic, instead of the Build volume of 1,603 vph. Response: The volume error has been noted and corrected. The updated analysis will be incorporated into future design of Santilli Circle.
DDRC – 3	Comment: In addition, we question if the No Build analysis is based upon the actual optimal signal timings implemented at the Circle. We believe the signal timings presented in the No Build analysis may reflect worse operations than may be attainable, skewing the No Build to Build analysis results comparison. Response: The analysis contained in the SFEIR, including the No Build analysis, reflects the actual optimized signal timings.
DDRC – 4	Comment: The VISSIM model disconnects Wellington Circle from Santilli Circle and Sweetser Circle, which does not accurately represent the existing roadway system. Of further concern, the simulation model shows that the Route 16 westbound queues approaching Wellington Circle back to the end of the link in the model where grid lock forms. It is important that the model connect the link between Wellington Circle and Santilli Circle in order to determine if the Wellington Circle westbound backups interrupt and affect flow upstream at Santilli Circle. Response: The Proponent deliberately didn't connect the two circles because origin-destination data from the River's Edge Drive/Wellington Station ramps is not available. Based on field observations, the eastbound direction of Route 16 doesn't back up at Santilli Circle, and although the westbound direction of Route 16 at Wellington Circle does occasionally back up to the River's Edge Drive ramps, it doesn't back up to Santilli Circle; therefore, the results are not affected by the two networks not being connected.
DDRC – 5	Comment: The analysis results show that the Santilli Highway traffic is not

DDR Corp	
	adequately being serviced by the proposed improvement plan. In fact, the VISSIM model indicates that less than 40% of the traffic attempting to exit from Santilli Highway to the Circle is getting process and onto the roadway network. This means that the volume circulating in the Circle is not correct and therefore, the results for vehicles exiting from Mystic View Road are not correct. The VISSIM model shows excessive backups on Santilli Highway. Response: The excessive queuing exists today on Santilli Highway. In the Build Mitigated conditions model, the proposed mitigation has been refined to include a slip lane from Santilli Highway onto Revere Beach Parkway (Route 16) westbound as well as provision for two lanes for queuing on Santilli Highway. The models indicate that these provisions will improve conditions on Santilli Highway.
DDRC – 6	Comment: The proposed mitigation plan calls for reconfiguration of the Mystic View Road intersection with the Circle. It is unclear if the traffic control proposed is for a stop or yield condition to exit Mystic View Road and enter the Circle. There is concern that the volume exiting from Mystic View Road will not be adequately services under either traffic control, particularly during the Saturday peak hour when a volume of 850+ vph would have to stop exiting Mystic View Road and yield to 700+/- vph circulating in the Circle. This new ramp configuration warrants a VISSIM analysis of the Saturday peak hour condition to ensure that the proposed mitigation plan is not adversely affecting traffic flow on Mystic View Road. Response: The Proponent will continue to work with the City of Everett, MassDOT, DCR, and the abutters to refine the design.

John Vitagliano	
JV – 1	Comment: Wynn's claim that 6% of their casino's patrons and employees will access their site by water transportation is unsupportable and disputed by recent real world operational experience in Boston Harbor, and the distinct possibility that existing LNG operational restraints will intensify as the result of programs to meet the region's growing energy demands. Response: The projected ridership for water transportation vessels is based on a careful and thoughtful analysis of potential ridership origin and destinations and the Proponent believes it is a realistic estimation of future

John Vitagliano	
	ridership. Based on conversations with the Boston Harbormaster, Harbor Pilots and U.S. Coast Guard, the LNG ship movements do not appear to be a significant impediment to successful water transportation service.
JV – 2	Comment: [Boat builders] stated that due to the design's unusually low air-draft requirement, coupled with standard freeboard safety standards, that the Wynn design would require the passenger cabin to be located very low in the vessel, requiring the passengers to step down on entry and step up on exiting which would be no only an obstacle to physically challenged passengers, but also a requirement for longer embarking and dis-embarking times, adversely affecting ferry schedules. Response: The proposed vessel design is similar to that successfully used in other parts of the world and will be fully handicapped accessible.
JV – 3	Comment: Another significant ferry service concern is the low-tide water depth in two critical locations: the east side of the Alford Street Bridge and also a large section of the Mystic River approach to the Wynn casino. Both sites would likely require dredging in order for the Wynn vessels to be certified as operational. Response: There are no water depth constraints for the operation of the proposed vessels, other than in the immediate area of the docking facility at the site, which is proposed to be dredged as part of the project.
JV – 4	Comment: The predictable lengthy winter moratorium on ferry service based on actual experience, the necessity of operating at least six ferries per hour (assuming an unrealistic 100 percent vessel load factor) to achieve the person trips mode share claims in the SFEIR, argue against water transportation ever making a meaningful contribution to the Wynn casino transportation system. Response: There are no winter moratoriums on passenger vessel operations in Boston Harbor and vessel operators and transportation analysts believe the operational parameters for the service are reasonable.

Thomas Lincoln	
TL – 1	Comment: It is imperative that this project does not impinge on the Malden River, River's Edge, or the excellent work done by Preotle, Lane in that

Thomas Lincoln	
	area over that past 15 years. Response: The Project's living shoreline has been designed to greatly improve existing conditions within areas already disturbed and degraded on the Project Site.

Ellin Reisner	
ER – 1	Comment: The SFEIR does not even address the traffic impacts on Mystic Avenue in Somerville nor does it take into consideration the increased traffic that will result from the build out of the Partners Health Care offices being constructed at Assembly Row. Response: The traffic impacts on Mystic Avenue in Somerville are estimated to be minimal based on analysis contained in the FEIR. The build out of Partners Healthcare at Assembly Row is included in the No Build conditions. However, according to the Notice of Project Change (NPC) filed by the Assembly Row project developers (EEA #13989), the Partners Healthcare office building will actually have less traffic impact than the IKEA that was originally proposed to occupy that site.
ER – 2	Comment: The interim plan [the Proponent's mitigation] keeps the Sullivan Square rotary and underpass. In addition to the traffic congestions the rotary will remain dangerous to enter and exit and maintaining the underpass precludes the long term improvements needed for the area. Response: The Proponent's mitigation will mitigate the Project traffic in Sullivan Square and does not preclude the implementation of either the surface or underpass long-term solutions.
ER – 3	Comment: I also believe that the proposed $250,000 offered by Wynn to study a bike/pedestrian crossing of the Mystic River between Assembly Row (and MBTA station) to the Casino should be increased to actually cover the costs of designing and building the crossing which will clearly benefit the Casino by making access to the site possible by public transportation (particularly for employees who would most like travel to the site this way). It is also critical to ensure that in constructing the pedestrian/bicycle crossing that the structure does not interfere with the possible future construction of a circumferential light rail route from the

Ellin Reisner	
	Grand Junction into Everett and Chelsea, as originally proposed in the MA DOT Circumferential Transportation study. Response: The Proponent has committed to provide funding for additional study of a Mystic River Crossing. DCR and/or MassDOT will be the proponents of that study and will ensure that circumferential light rail is not precluded by a pedestrian/bicycle bridge.

Lynne C. Levesque	
LL – 1	Comment: While Wynn representatives have been most responsive in providing the community with information about their plans, we have no way of knowing if the City of Boston agrees with their plans and traffic numbers. Representatives of the City have been unable to participate in any of these meetings because of the bending lawsuit filed by the City against the MGC. Response: The Proponent appreciates the commenter's acknowledgement of its participation with the community. Ongoing permitting activities will include public participation as required by law and policy.
LL – 2	Comment: It makes no sense to me that Wynn plans to spend $10 million and perhaps more for a short-term solution to be completed within 3 years prior to their opening. While I understand that part of their design could be incorporated into a long-term solution, I fear that moving forward with their plan will negatively impact progress on the long-term plan for improving Sullivan Square and Rutherford Avenue and will perhaps results in the potential waste of money that could be better spend on a long-term solution. Response: In order for the Project to open, it must complete its necessary mitigation prior to opening. Because a long-term plan for Sullivan Square is still in the conceptual design stage, the Proponent estimates that it would take five to eight years for design and construction of the long-term improvements.
LL – 3	Comment: Wynn maintains that their short-term plan will work with either the surface or the tunnel solutions to the Sullivan Square/Rutherford Avenue traffic disaster. It is unclear to me if this is in fact true, again since the City has not shared their reactions to Wynn's plans with the

Lynne C. Levesque	
	Charlestown community as a result of the pending lawsuit. Response: The Proponent believes that it has demonstrated the viability of its mitigation plan. The Proponent cannot speculate on the City' reaction.
LL – 4	Comment: [Please provide] in situ mockups of all lighting poles, any proposed illuminated items and signage, lighted displays within a building that are intended to be seen from a distance, and hi-readers, including anything considered by a layperson to be a light or sign, that is associated with the Wynn Casino, wherever they may be located, to determine any impacts on Charlestown, especially our historic Bunker Hill Grounds, the Phipps Street Burying Ground, and the Charlestown/Doherty Playground, all listed in the National Register of Historic Places, plus the Barry Playground located next to the Alford St. Bridge and any other playgrounds along the Mystic River. Response: The Project will be designed to meet the requirements of the City of Everett Zoning Ordinance and Chapter 91. Illumination beyond local and Chapter 91 review is not a subject within MEPA jurisdiction.
LL – 5	Comment: [Please provide] a listing of the corner points and roof heights, including mechanicals, of all structures within the Wynn Development to see the actual heights and dimensions in relationship to each other and visibility from Charlestown's historic and recreational resources. Response: The Project will be designed to meet the requirements of the City of Everett Zoning Ordinance and Chapter 91. Illumination beyond local and Chapter 91 review is not a subject within MEPA jurisdiction.
LL – 6	Comment: [Please provide] a listing of the times of day and night throughout the year with the highest and lowest intensity of each of the above listed signs and items. Response: The Project will be designed to meet the requirements of the City of Everett Zoning Ordinance and Chapter 91. Illumination beyond local and Chapter 91 review is not a subject within MEPA jurisdiction.
LL – 7	Comment: [Please provide] a description of the controls and remedies regarding maximum allowed standards that will be put into effect by the appropriate State agency to test the Wynn stated maximums, with funds for such testing to be placed in escrow by Wynn with the appropriate state

Lynne C. Levesque	
	agency. Response: See response to LL-6.

Samantha A. Miko	
SM – 1	Comment: The Final Environmental Impact Report and the SFEIR do not adequately address the impacts of this schedule delay and request for additional reporting to MassDEP. The long delay in the interim schedule for remediation of the Monsanto Site may have substantial impacts on the Project's construction timeline – both for on-site construction and construction of off-site mitigation. However, the SFEIR provided no analysis of the impacts of these delays nor the impacts on the mitigation proposals. Nor does that SFEIR discuss whether there will be additional delays of further analysis required to implement a remedy that will enable construction of the Wynn Project at the Monsanto Site. Given that there will be at least a one-year delay in the submission of a Remedial Implementation Plan to MassDEP, and that this submission is a mere eighteen months before the end of 2017, it seems unlikely that the Project could open to the public on its stated schedule. Response: Remediation activities are progressing in accordance with the MCP. All required remediation is expected to be completed prior to the Project opening.
SM – 2	Comment: However, neither the SFEIR nor the FEIR supply adequate analysis on the feasibility of construction of the necessary infrastructure to support the water shuttle, not the effect that elevated levels of contamination in the sediment and surface water would have on the ultimate feasibility of these water transportation proposals. There is no analysis – even though such analysis was requested by several commenters on the FEIR including the City of Boston Transportation Department –of the impacts to traffic on local roadways that would be occasioned by the displacement of 6% of the Project's patrons should subsequent analysis preclude a permanent solution that enable construction of the infrastructure necessary to support water transportation. Response: The current levels of contamination will have no effect on the feasibility of the water transportation proposals. The construction of the infrastructure will involve the removal of contaminated soil along a portion

Samantha A. Miko	
	of the shoreline, and the removal of contaminated sediment from within the navigational channel being proposed as part of the project.
SM – 3	Comment: Moreover, the SFEIR provides insufficient explanation whether there will be difficulty or delays in procuring and manufacturing the custom fleet of high capacity boats capable of transporting 6% of Project patrons through the congested waters of Boston Harbor and beneath the 12-foot clearance of the Alford Street drawbridge in the time space described in Section 4.4.3. Response: The Proponent has discussed the boat design intent with several boat manufactures and did not discover significant concerns about producing the boats that meet the criteria. The manufacturing time prior to opening is sufficient to procure and manufacture the boats, based on the experience of our marine consultants experience with other similar projects.
SM – 4	Comment: To acquire highway rights –of-way needed to the infrastructure improvements proposed to mitigate the traffic impacts of the Project the SFEIR make clear that, at a minimum, land takings will be necessary at Lower Broadway and Alford Street (Route 99) in the Cities of Boston and Everett and at Sullivan Square in the City of Boston. Wynn should provide additional analysis, identifying with specificity all parcels needed for mitigation, the possibility of delays in the acquisition schedule, and contingencies if it is not able to acquire the necessary parcels through a lawful transaction. Response: The Proponent has acquired or is negotiating to acquire the necessary rights-of-way along Broadway/Alford Street (Route 99). In Sullivan Square, the only right-of-way to be acquired is the change of ownership of the MBTA busway (Beacham Street Extension), currently used by MBTA buses and motorists using the parking lot to the east of the station. The busway is currently owned by the MBTA and would become a public street under this plan.
SM – 5	Comment: Finally, I am also concerned by plans that show Wynn will take open space in the Mystic River Reservation and perhaps elsewhere that is protected by article 97. As noted in its August 8, 2014 comment letter on Wynn's FEIR, the Department of Conservation and Recreation owns and operates open space that Wynn has proposed to alter in the SFEIR and

Samantha A. Miko	
	FEIR, including Mystic Valley Parkway (which includes Wellington Circle), Revere Beach Parkway (which includes Santilli Circle) and the Mystic River Reservation. In Wellington Circle, Wynn's proposal to widen the roadway to add travel lanes, reconstruct sidewalks and build other modifications comes at the expense of existing open space protected by Article 97. Response: Proposed adjustments to the Mystic Valley Parkway will provide improvements to traffic flow as well as sidewalk and landscape enhancements as described in the SFEIR within the existing Right of Way. The proposal to improve Wellington Circle does not anticipate impacts to land under the jurisdiction on Article 97.

CHAPTER 5: SECRETARY'S CERTIFICATE AND RESPONSES TO COMMENTS ON THE SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT REPORT 5-1

The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
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April 3, 2015

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Wynn Everett
PROJECT MUNICIPALITY	: Everett
PROJECT WATERSHED	: Boston Harbor
EEA NUMBER	: 15060
PROJECT PROPONENT	: Wynn MA, LLC
DATE NOTICED IN MONITOR	: February 25, 2015

As Secretary of Energy and Environmental Affairs, I hereby determine that the Supplemental Final Environmental Impact Report (SFEIR) submitted on this project **does not adequately and properly comply** with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62I) and with its implementing regulations (301 CMR 11.00). Therefore, I am requiring a Second Supplemental Final Environmental Impact Report (SSFEIR).

I commend the Proponent for its progress to date on mitigation efforts. I am confident the limited scope items in the SSFEIR can be addressed in a timely manner. I want to recognize the significant time and energy that the Proponent has invested in this project and in the preparation of the SFEIR. The SFEIR represents significant progress in identifying traffic and transportation impacts and developing appropriate mitigation. The Massachusetts Department of Transportation (MassDOT) deserves recognition for the constructive role MassDOT has played in supporting the development of this data, analysis and mitigation. In addition, on behalf of the Administration, I recognize the important balance between economic development and job creation and our responsibility to adequately avoid, minimize and mitigate Damage to the Environment.

As the Proponent and the public are aware, since the issuance of Certificate on the Final Environmental Impact Report (FEIR), the Massachusetts Gaming Commission (MGC) issued a Category 1 gaming license to the Proponent, effective November 18, 2014, pursuant to Chapter 194 of the Acts of 2011: An Act Establishing Expanded Gaming in the Commonwealth and M.G.L. Chapter 23K, Section 19, as amended by Section 16 of the Expanded Gaming Act. Conditions of the license include completion of the MEPA review process. Upon completion of the MEPA process, the Gaming Commission will issue Section 61 Findings for the Gaming License that will identify enforceable commitments to avoid, minimize and mitigate project impacts. The MEPA regulations do not consider Agency Action final if the Permit, contract or other relevant document approving or allowing the Agency Action contains terms such as a condition or restriction that provides that such Agency Action shall be deemed not to have taken place until MEPA review is complete, provided that the Agency shall reconsider and confirm or modify the Agency Action and any conditions thereof following completion of MEPA review (301 CMR 11.02, Agency Action (c)).

MEPA jurisdiction is limited to the subject matter of required or potentially required State Agency Actions, except in the case of a project proposed by a State Agency or receiving State Financial Assistance. In that case, broad scope jurisdiction applies and extends to all aspects of a Project that are likely, directly or indirectly, to cause Damage to the Environment, as defined in the MEPA regulations. In some instances the subject matter of the Agency Action is sufficiently broad (e.g. a Chapter 91 License, Energy Facilities Siting Board review) such that it is functionally equivalent to broad scope jurisdiction. That is the case with the Gaming License which addresses a broad range of environmental issues - sustainability, energy efficiency, renewable energy, and traffic - and extends to mitigation of environmental impacts on host and surrounding communities.

Previous review documents submitted to MEPA, including the FEIR, addressed a wide range of environmental issues. The Certificate on the FEIR determined that, with the exception of transportation and traffic, issues had been adequately addressed in the FEIR or could be addressed through subsequent review, approval and permitting processes. The Certificate on the FEIR identified and described the significant commitments the Proponent has made to mitigate environmental impacts including redevelopment and remediation of a brownfield site located in close proximity to transit, provision of 7.42 acres of open space, creation of access to and along the Mystic River including extension of a multi-use path to Gateway Park, and salt marsh restoration. The Certificate on the FEIR included a limited Scope that was focused on Traffic and Transportation, a Response to Comments and revised Section 61 Findings.

Prior to filing the SFEIR, the Proponent revised its design based on direction from the MGC. The SFEIR, in addition to addressing the limited Scope, identified these project changes and associated changes in environmental impacts. The changes are identified and described in the Project Changes Since the Filing of the FEIR Section of this Certificate. The primary changes are the addition of 58,005 square feet (sf) to the size of the building, the addition of 125 hotel rooms (from 504 to 629) and the addition of 420 gaming positions (from 4,160 to 4,580).

The SFEIR provides a revised and updated traffic impact assessment (TIA) which reflects the productive consultations held between MassDOT and the Proponent since the filing of the FEIR. It includes updated traffic counts, improved modeling, and better defined mitigation. It includes a revised analysis of the project's impacts on the Orange Line and existing bus service and has revised its private

shuttle system to compliment existing transit service. Throughout the review of many projects vying for a Gaming License, the MEPA Office and MassDOT have made a concerted effort to provide clear and consistent information regarding potential environmental and transportation impacts to inform decisions by MGC, municipalities and residents. The methodology for the transportation analysis included in the SFEIR is consistent with that which has been required of each of the Casino proposals, including MGM Springfield (EEA #15033), Project First Light (EEA #15159) and the proposed Mohegan Sun project in Revere (EEA #15006). The SFEIR represents significant progress in identifying traffic and transportation impacts.

While the SFEIR represents significant progress in identifying traffic and transportation impacts, there are still Scope items that were not fully addressed, including the identification of measures to ensure MBTA operations are protected in the long-term and identification of associated legally enforceable Section 61 Findings. In addition, the MBTA and the Proponent completed a Land Transfer necessary to support the construction of access to the project site. MassDOT has acknowledged that the conveyance of the land to the Proponent prior to the conclusion of the MEPA process is a violation of the MEPA statute. Therefore, MassDOT and the Proponent must file an SSFEIR to develop appropriate remedies to satisfy the above-mentioned issues. 1

Consultations with and comments from MassDOT and comments from municipalities demonstrate that additional analysis and mitigation is necessary for the parties to satisfy the statutory requirement to avoid, minimize and mitigate impacts to Damage to the Environment to the maximum extent feasible, including impacts to MBTA transit operations and infrastructure.

Governor Baker has made a firm commitment to elevate the Commonwealth's partnership with Cities and Towns. Equally, the Governor is committed to job growth and economic development. Evaluating the impacts of State Agency Actions is at the core of MEPA's purpose and statutory authority and supports the Governor's commitment to ensure that we understand the consequences, implications and ramifications of state actions on our municipal partners. The City of Everett and its citizens have expressed its firm support for this project and its economic development potential. Comments from the Cities of Boston, Malden, Revere, and Somerville identify significant concerns with the project's impacts on transportation infrastructure. These comments question the effectiveness of the proposed mitigation and, in particular, highlight the undefined nature of long-term mitigation. I am aware that these comments are provided, not only within the context of MEPA review, but also within the context of active litigation. Nonetheless, I note the practical consideration that much of the proposed transportation mitigation, including mitigation necessary to minimize impacts to roads under State jurisdiction, requires municipal review and approval.

Based on a review of the SFEIR, consultation with State Agencies, and a review of comments submitted, I have determined that a SSFEIR is warranted and necessary to ensure the MGC and State Agencies have sufficient information regarding environmental and transportation impacts and proposed mitigation prior to the taking of Final Agency Actions.

Specifically, the Scope for the SSFEIR will address the following:

1. Provide an explanation of and remedy for the premature conveyance of land from MassDOT/MBTA and its acceptance by the Proponent prior to the completion of MEPA review.
2. Commit to a specific dollar amount for an annual operating subsidy to the MBTA to support service and capacity improvements on the Orange Line. 2
3. Clarification of the Traffic Impact Assessment and supplemental data and analysis.
4. Revised Draft Section 61 Findings that incorporate commitments associated with the three requirements listed above.
5. Response to Comments document that provides clear and specific responses to issues raised.

Project Description

As described in the SFEIR, the project consists of the redevelopment of a 33.9-acre site in Everett as a destination resort casino. The site is located on Horizon Way and Lower Broadway (Rt. 99) in Everett. Chapter 194 of the Acts of 2011: An Act Establishing Expanded Gaming in the Commonwealth and M.G.L. Chapter 23K, Section 19, as amended by Section 16 of the Expanded Gaming Act, authorizes the Massachusetts Gaming Commission (MGC) to license three casinos. The Act identifies three regions of the state - Region A (Suffolk, Middlesex, Essex, Norfolk and Worcester counties), Region B (Hampshire, Hampden, Franklin and Berkshire counties) and Region C (Bristol, Plymouth, Nantucket, Dukes and Barnstable counties) – and authorizes MGC to permit one casino in each region. This project is located in Region A.

The project will include a total of 3,096,700 square foot (sf), comprised of the following:

- A gaming facility with 4,580 total gaming positions
- A hotel tower, 386-foot high, with 629-rooms (621,774 sf)
- Retail space (52,632sf)
- Food and beverage space (54,680 sf)
- Lobbies, lounge, and an atrium garden (front-of-house) (58,548 sf)
- Back-of-House (411,058 sf)
- A spa and gym (15,405 sf)
- Convention/meeting rooms (37,068 sf)

The Proponent proposes to construct a parking structure below the Casino Level (including under the retail portion of the Project), with three below-grade levels and one at-grade level to provide self-serve and valet parking spaces for patrons for a total of 1,627,751 sf. Employee parking will be accommodated at off-site locations. The Proponent will provide shuttle service to and from the Project Site. In addition, there are 3,400 on-site parking spaces and 800 off-site parking spaces for employee parking. Employee parking will located at existing parking facilities or newly constructed lots.

The project includes remediation and restoration of the site. The proposed shoreline work includes the installation of a vertical steel pile bulkhead, the placement of stone revetments and the installation of pile-supported walkways, the removal of abandoned and deteriorated structures and remnants, salt marsh restoration and re-vegetation of the shoreline. The waterside work includes the

dredging of approximately 15,000 cubic yards (cy) of sediment over approximately 41,480 sf to provide an adequate water depth of six feet below mean low water (MLW) to accommodate water transportation vessels. Coastal bank and salt marsh restoration is proposed within a 69,000 sf area landward of high tide at the southwestern edge of the site. Connections from the harborwalk on the Project Site via a new pedestrian and bicycle path under the MBTA right-of-way are proposed.

Access to the Project Site is proposed via a new boulevard-type driveway located approximately 150 feet north of Horizon Way. It will intersect the west side of Lower Broadway (Route 99) just north of Horizon Way opposite Mystic Street. This access requires acquisition of land (approximately 0.5 acres) from the Massachusetts Bay Transportation Authority (MBTA) and the removal and relocation of certain infrastructure elements associated with operation of the MBTA maintenance facility. The current unsignalized entrance driveway to the MBTA maintenance facility will be relocated to the north on Lower Broadway to the signalized intersection at Beacham Street.

A Host Community Agreement (HCA) was executed with the City of Everett on April 19, 2013. It was approved by the citizens of Everett pursuant to a referendum held on June 22, 2013, in accordance with the Gaming Act. It indicates that the Project will provide 4,000 construction jobs and 4,000 permanent jobs, improve and expand infrastructure, and support a myriad of community programs and services. The HCA identifies the following payments to the City of Everett: $30 million for capital improvements; $20 million annual PILOT payments; $5 million annual community impact fee; and, $250,000 annual contribution to the Everett Citizens Foundation. Pursuant to M.G.L Chapter 23K, a portion of the taxes on the Project's gaming revenue will be allocated to a community mitigation fund. The City of Boston requested that it be identified as a host community; however, the MGC determined that it did not meet the criteria for a host community.

The Proponent entered into Surrounding Community Agreements (SCA) with the City of Malden (November 12, 2013), the City of Medford (April 11, 2014), the City of Cambridge (April 22, 2014), the City of Somerville (June 12, 2014), and the City of Chelsea (June 9, 2014). The Proponent entered into Neighboring Community Agreements with the City of Lynn and the City of Melrose on January 28, 2014.

The Proponent designated the City of Boston as a "Surrounding Community," however the City of Boston declined to participate in the arbitration process established pursuant to the terms of the Gaming Act, thereby relinquishing its designation. As a result, the Proponent agreed to certain specified conditions in the Gaming License for the purpose of mitigating any adverse impacts to the City of Boston and, in particular, the Charlestown neighborhood. The conditions set forth in the Gaming License include a one-time, pre-opening payment by the Proponent of $1,000,000. Per the Gaming License, this payment can be used to support Charlestown's non-profits organizations, parks, after-school activities, senior programs, job training programs, cultural events and related activities that promote Charlestown's heritage, quality of life, recreational and cultural activities. On January 6, 2015, the Proponent delivered this initial payment to the MGC following the City of Boston's refusal to accept the payment. The MGC continues to hold this payment in escrow for the City of Boston's benefit. Following the opening of the Project, the Proponent has agreed to annual payments to the City of Boston in the amount of $1,600,000, adjusted annually to reflect increases in the Consumer Price Index.

In addition to the specific agreements noted above, the Expanded Gaming Act establishes a Community Mitigation Fund, which is administered by the MGC. Monies from the Community Mitigation Fund shall be used to:

...assist the host community and surrounding communities in offsetting costs related to the construction and operation of a gaming establishment including, but not limited to, communities and water and sewer districts in the vicinity of the gaming establishment, local and regional education, transportation, infrastructure, housing, environmental and public safety, including the office of the county district attorney, police, fire, and emergency services (M.G.L. Chapter 23K, Section 61(b)).

I note that the Expanded Gaming Act requires the establishment of a Subcommittee on Community Mitigation consisting of 12 members, including, but not limited to, representatives from each Region's Host Community, local chambers of commerce, the Department of Revenue's Division of Local Services, the MGC, the Massachusetts Municipal Association, and an appointee of the Governor. Among other responsibilities, this subcommittee will develop recommendations to be considered by the MGC regarding how funds may be expended from the Community Mitigation Fund (M.G.L. Chapter 23K, Section 68(b)). Furthermore, each Region may establish a local Community Mitigation Advisory Committee, which shall include no fewer than six members, to provide information and develop recommendations for the Subcommittee on Community Mitigation, including ways in which funds may be expended from the Community Mitigation Fund. This local committee will include members appointed by Host and Surrounding Communities, the regional planning agency, and the MGC to represent chambers of commerce, regional economic development, and human service providers. (M.G.L. Chapter 23K, Section 68(e)).

Project Site

The 33.9-acre site is located in Everett adjacent to the Mystic River. Approximately 25.6 acres are upland, surrounded by shoreline and the remnants of marine structures, and approximately 8.3 acres are located below mean high water (MHW) on the Mystic River. The site includes approximately 1,600 lf of shoreline along flowed tidelands. A small area of the site is used as a materials storage yard and includes a 5,200 sf construction trailer/office. Historic uses include the Monsanto chemical manufacturing facility. The site is classified as a disposal site subject to Massachusetts General Law Chapter 21E (MGL c.21E) and the Massachusetts Contingency Plan (MCP). It is contaminated and contains very high levels of arsenic and lead, both in soil and groundwater. Contaminated sediments have also been identified in the area of the site within the Mystic River.

The site is bordered to the west by the tracks of the MBTA Newburyport commuter rail line. The upland portions of the site are bounded by Horizon Way, Rt. 99, and commercial and institutional properties. Most of the soils on the site are disturbed and comprised of fill material. Along the shoreline is a mix of deteriorated stone seawalls, loose gravel and boulders, and rotted timber piers and pilings. The shallower portions of the shoreline also contain debris and remnants of timber structures.

Access to the site is via Horizon Way which forms an unsignalized intersection with Broadway (Rt. 99) in Everett. The site is located in an urban, commercial/industrial area that suffered from economic disinvestment during the latter part of the twentieth century when manufacturing, import and fishery activities declined. Surrounding land uses are primarily commercial/retail, with local businesses

(e.g. an auto dealership, chain restaurants, and an auto repair shop) and infill residential structures nearby. Proximate uses include Boston Water and Sewer Commission (BWSC) and Massachusetts Water Resources Authority (MWRA) properties, the MBTA's maintenance facility (Everett Shops) to the north, and the Gateway Center and Gateway Park to the west. The Department of Conservation and Recreation (DCR) owns and operates parkways in the vicinity of the site, including Revere Beach Parkway, the Fellsway and Mystic Valley Parkway. In addition, DCR owns and operates the Mystic River Reservation and the Amelia Earhart dam, a flood control structure located on the Mystic River in the vicinity of the site.

The site is bordered by the Mystic River to the south and an embayment to the east. The embayment is approximately 350 to 500 feet wide from shoreline to shoreline (from the Project area to the upland east of the embayment containing the operations of the MWRA and BWSC). The embayment contains a former channel which was reportedly constructed in the mid-1800s. Records indicate the channel to be about 1,000 feet long with a width of 100 feet, and an original draft of 20 feet below MLW. The channel flares out at the northern end to about 250 feet wide. The channel has since shoaled, and the present depth does not exceed 13 feet below the MLW mark. Waters adjacent to the channel are shallower than the central portion of the channel. The eastern side of the embayment is a mud flat with surface grades from the MLW mark to about three feet above it. The mud flat contains a variety of debris, including several abandoned timber barges.

Permits and Jurisdiction

The project is subject to MEPA review and requires the preparation of a Mandatory EIR pursuant to 301 CMR 11.03(1)(a)(2), 11.03(3)(a)(5), 11.03(6)(a)(6) and 11.03(6)(a)(7) because it requires State Agency Actions and it will create 10 or more acres of impervious area, create a New non-water dependent use occupying one or more acres of waterways or tidelands, generate 3,000 or more New adt on roadways providing access to a single location, and provide 1,000 or more New parking spaces at a single location

The project requires a Category 1 Gaming License from the MGC, a Vehicular Access Permit from the Massachusetts Department of Transportation (MassDOT), a land transfer from the MBTA, a Construction and Access Permit from DCR, and Airspace Review by the Massachusetts Aeronautics Commission (MAC). It requires a Sewer Use Discharge Permit (or waiver) from the MWRA and may also require a 8(M) Permit from MWRA. It requires a Chapter 91 (c.91) License and a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP) and it may also require an Air Plan Approval from MassDEP. It may require Federal Consistency Review by Coastal Zone Management (CZM). The project is subject to the May 5, 2010 MEPA GHG Emission Policy and Protocol (GHG Policy).

The project is not subject to the enhanced analysis provisions of the EEA Environmental Justice (EJ) Policy. The project is located in and adjacent to communities with designated EJ populations; however, the project does not exceed the MEPA thresholds for solid waste or air quality that trigger a requirement for enhanced analysis.

It will require multiple permits and approvals from the City of Everett, including an Order of Conditions from the Everett Conservation Commission (or a Superseding Order of Conditions (SOC)

from MassDEP if the local Order is appealed). It will require approvals from the City of Boston Transportation Department and the Public Improvements Commission (PIC) for off-site roadway improvements.

The project requires a Section 404 Clean Water Act Permit and a Section 10 Permit from the United States Army Corps of Engineers (ACOE). In addition, the project may require approval from the Federal Highway Administration (FHWA) for modifications to the highway system (I-93) and/or for work on the National Highway System (NHS). As a result, the project may be subject to review pursuant to the National Environmental Policy Act (NEPA) and review pursuant to Section 106 of the National Historic Preservation Act (NHPA). The project also requires a Part 77 Airspace Review from the Federal Aviation Administration (FAA) and a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the United States Environmental Protection Agency (EPA) for stormwater discharges from a construction site of over one acre.

MEPA jurisdiction is limited to the subject matter of required or potentially required permits; however, the subject matter of the Gaming License confers broad scope jurisdiction and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Project Changes Since the Filing of the FEIR

The SFEIR identifies the same elements as the FEIR program, however the design has changed and includes an increase in the size of the building and additional hotel rooms. It has increased from 3,038,695 sf to 3,096,700 sf, an increase of 58,005 sf.

In addition, the following changes are identified:

- An increase in gaming positions from 4,160 to 4,580 total, an increase of 420.
- Hotel rooms have increased from 504- room to 629-rooms resulting in an increase of 78,097 sf from 543,677 sf to 621,774 sf;
- Retail space has decreased from 77,250 sf to 52,632 sf;
- Food and beverage space has decreased from 64,593 sf to 54,680 sf, a decrease of 9,913 sf;
- Front-of-House (lobbies, lounge, and an atrium garden) has decreased by 58,548 sf;
- Back-of-House has increased from 383,725 sf to 411,058 sf, an increase of 27,333;
- The spa and gym space has increased from 13,130 sf to 15,405 sf, an increase of 2,275 sf; and
- Convention/meeting rooms have increased from 32,942 sf to 37,068 sf, an increase of 4,126 sf;

The project changes described above resulted in some changes in environmental impacts which are noted in the following section.[1]

[1] An email dated March 14, 2015, clarified and expanded upon changes in environmental impacts associated with the revised project and addressed the methodology for determining those changes in impacts.

Environmental Impacts and Mitigation

Potential environmental impacts are associated with the creation of 19.42 acres of impervious surfaces, alteration of wetland resource areas. It will require 311,830 gallons per day (gpd) of water (an increase from 266,554 gpd proposed in the FEIR) and will generate 283,482 gpd of wastewater (an increase from the 242,322 gpd proposed in the FEIR). Compared to estimates provided in the FEIR, average daily trips (adt) increased by 812 adt on a weekday and by 1,222 on a Saturday. The project will generate approximately 31,844 new (unadjusted) adt and 37,916 new (unadjusted) adt on a Saturday. When adjusted for mode share, the project is estimated to generate approximately 20,130 adt on a weekday and 23,982 adt on a Saturday.

The waterside work includes the dredging of approximately 15,000 cubic yards (cy) of sediment over approximately 41,480 sf to provide an adequate water depth of six feet below mean low water (MLW) to accommodate water transportation vessels. This represents an increase of 2,300 cy of dredge material compared to the Final EIR. Impacts to coastal bank have been revised based on an updated resource delineation. Impacts have increased by 400 sf from 41,080 to 41,480.[2]

Measures to avoid, minimize and mitigate impacts include redevelopment and remediation of a brownfield site located in proximity to transit, provision of 7.42 acres of open space, access to and along the Mystic River including a connection to Gateway Park, salt marsh restoration and replication of shellfish beds, installation of a stormwater management system, roadway improvements, and improvements to transit, bike and pedestrian access. The building will be designed to be certifiable by the US Green Building Council's Leadership in Environmental and Energy Design (LEED) at the Gold level, or higher. The project incorporates measures to improve energy efficiency including use of a Combined Heat and Power (CHP) system. In addition, it includes a commitment to install a PV system and/or purchase Green Power from local service providers (equal to 10% of the Project's annual electrical consumption).

Review of the SFEIR

The Scope for the SFEIR was limited to traffic and transportation, a Response to Comments, and revised mitigation including Draft Section 61 Findings. The SFEIR included an updated project description and associated plans. The SFEIR included a revised Transportation Impact Analysis (TIA), revised mitigation based on revised analysis and comment letters, and provided conceptual plans for proposed improvements. The SFEIR did provide additional analysis and clarifications of the project and provided another opportunity for State Agencies, municipal officials and the public to review the information.

The SFEIR included a separate chapter summarizing proposed mitigation measures and included draft Section 61 Findings for each State Agency that will issue permits for the project.

[2] In the FEIR, the impact was estimated at 41,080 sf, based on delineating top of bank as coincident with the break in slope of 10% or less. In the SFEIR, the Proponent used a more precise delineation by interpolation between contours based on detailed topographic survey and site visits.

State Agency Actions and Permitting

The project will require Access Permits from MassDOT and from DCR, in addition to local approvals for proposed roadway improvements. The project will also require a Vehicular Access Permit from MassDOT to implement improvements for modifications to the I-93 Northbound off-ramp at Exit 28.

Proposed improvements along the Route 16 corridor at Wellington, Santilli, Sweetser, and Bell Circles are primarily under the jurisdiction of DCR. However, DCR may transfer to MassDOT the segment of Route 16 from Interstate 93 to approximately Bell Circle. Pending completion of the transfer, DCR has agreed that the design review for the proposed improvements at these locations will primarily MassDOT's responsibility.

The Proponent may also be required to acquire a permit to implement the proposed traffic signal improvements at Bell Circle. The project will require a Federal Aviation Administration (FAA) Air Navigation permit for the casino building and construction cranes. The project will require MBTA approvals for implementation of site improvements at Sullivan Square Station, Wellington Station, and Malden Station. . In addition, the Proponent must prepare a Project Framework Document (PDF) for the proposed ramp modifications. The PDF will be subject to review and approval by MassDOT and subsequent submittal to the Federal Highway Administration (FHWA). FHWA will review the PFD for conformance with the FHWA's Policy on Access to the Interstate System.

Land Transfer

The proposed access drive requires the acquisition of land from the MBTA. MBTA infrastructure would be removed and relocated to support ongoing operation of the MBTA maintenance facility. In addition, the unsignalized entrance driveway to the maintenance facility would be relocated to the north at the signalized intersection at Beacham Street and would also serve as a secondary access drive.

On February 26, 2015, MassDOT/MBTA executed a quitclaim deed transferring 1.758 acres of land to the Proponent for $6 million dollars. The transactions was completed and the deed was recorded. The Land Transfer was taken prior to the completion of the MEPA review process and the conveyance documents do not contain sufficient provisions to ensure compliance with MEPA. This potential conveyance was identified in previous MEPA filings and the SFEIR did include a reference to the possibility that the land would be transferred during MEPA review; however, identification of this possibility does not relieve the MBTA or the Proponent of the burden to comply with the MEPA statute and meet its obligations to an open public process. It is regrettable that this conveyance occurred without due public process or any inclusion of provisions to ensure consistency with the MEPA regulations' requirements for State Agency Actions taken prior to completion of MEPA review.

The MassDOT comment letter acknowledges that, pursuant to the MEPA regulations, this action constituted Final Agency Action and, therefore, did not comply with the MEPA Statute. The comment letter indicates that MassDOT and the MBTA are committed to adhering to the MEPA regulations and 3
process. MassDOT has committed to remedy this violation and will work with the MEPA Office and the Proponent on the development of appropriate remedies. Such a remedy could include reversal of the

Land Transfer or placement of the Transfer in escrow until MEPA review is completed. The MassDOT comment letter indicates that the Proponent has agreed to place the property in escrow until 60 days after the issuance of a Certificate of adequacy on the final MEPA review document.

As noted in the Scope, the SSFEIR must address how MBTA infrastructure and operations are protected under the terms of the transfer and include revised Draft Section 61 Findings. In addition, Secretary Pollack has directed MassDOT and MBTA staff to develop a more robust internal process to flag land transfers and real estate transactions that are subject to MEPA to ensure compliance prior to execution. 4

Traffic and Transportation

The SFEIR includes an updated transportation study prepared in conformance with the EEA/MassDOT Transportation Impact Assessment (TIA) Guidelines (2014). The study includes a comprehensive assessment of the transportation system in the project area based on a thorough analysis of existing and future conditions. The SFEIR has reevaluated the transportation impacts of the proposed project based on revised trip generation estimates along with future transportation demands due to projected regional traffic growth, independent of the proposed development.

The SFEIR includes an updated mitigation program to address impacts of the project in the Future Build condition. The mitigation program is multimodal and generally consists of highway, transit, bicycle, water transportation, and pedestrian improvements. The Proponent has also committed to a comprehensive transportation demand management (TDM) program to reduce automobile trip demand and further mitigate the impacts of the project which is described in the Mitigation section of this Certificate.

Trip Generation

The SFEIR contains revised trip generation calculations for the project to reflect the SFEIR development program. According to the Trip Generation Summary table, the project is expected to generate a total of 53,228 person trips on an average Friday and a total of 63,332 person trips on an average Saturday. Of the person trips on an average Friday, 16,178 are expected to be made via public and private mass transportation (including 979 person trips during the peak hour), 204 are expected to be made via walking or bicycling, and 36,846 are expected to be made via automobile. Due to assumed vehicle occupancy rates and credits for pass-by trips, the automobile person trips generate 20,130 net vehicle trips on an average Friday, including 1,358 net vehicle trips during the Friday PM peak hour. Of the person trips on an average Saturday, 19,158 are expected to be made via public and private mass transportation (including 1,404 trips during the peak hour), 244 are expected to be made via walking or bicycling, and 43,930 are expected to be made via automobile. Due to assumed vehicle occupancy rates and credits for pass-by trips, the automobile person trips generate 23,982 net vehicle trips on an average Saturday, including 1,810 net vehicle trips during the Friday PM peak hour.

MassDOT states in its comments that the methodology used to estimate person trips for the project are adequately addressed, and the SFEIR includes updated trip generation summary tables that show all assumptions, land uses, and changes in the development program. In addition, MassDOT concurs with the credits taken in the SFEIR to calculate net trip generation. The trip generation calculations reflect credits allowed for pass-by trips and mode share. MassDOT comments on the FEIR

reiterate that, given the urban context of the project, the commitment to a strong TDM program, and the ability to hold the Proponent accountable to site trip reduction strategies through monitoring and reporting, the project can assume a significant number of non-private vehicular trips.

Many comments continue to question the methodology for trip generation, including comments from the City of Boston, City of Somerville and City of Revere. The methodology for the trip generation in the SFEIR is consistent with that which has been required of each of the Casino proposals, including MGM Springfield (EEA #15033), Project First Light (EEA #15159) and the proposed Mohegan Sun project in Revere (EEA #15006).

Traffic Operations

The SFEIR presents an evaluation of traffic operations conducted for a number of intersections and roadway segments within the study area. The TIA includes updated capacity analyses and a summary of the 50th and 95th percentile vehicle queues for these intersections. In addition, the Proponent has adequately addressed discrepancies between the SYNCHRO traffic software and the VISSIM simulation model used to verify the mitigation plan performance measures. Working with the MassDOT Traffic Operations unit, information used to conduct both capacity analysis and traffic simulation were reviewed, calibrated, and validated.

The SFEIR reanalyzed the existing Level of Service (LOS) on the roads in the Study Area; the anticipated LOS on potentially affected roads in the Study Area in the No Build Condition, the Build Condition, and the Build with Mitigation Condition. MassDOT provided input and direction on the methodologies used in the analysis and reviewed the results.

The data used to develop the VISSIM model in the SFEIR was the same as the data used in the transportation analyses presented in the FEIR, supplemented by new traffic counts as requested by the City of Boston's BTD and collected in December 2014. Additional field observations were conducted at locations where count data were updated in order to collect up-to-date queue data.

Impacts of the project on the following intersections within the Study Area were reevaluated:

- Horizon Way/Broadway (Route 99), Everett (in future, Project primary driveway, combined with location 2);
- Beacham Street/Broadway (Route 99), Everett (in future, Project service driveway);
- Bowdoin Street/Broadway (Route 99), Everett;
- Revere Beach Parkway (Route 16)/Santilli Highway/Mystic View Road/Route 99 Connector (Santilli Circle), Everett;
- Revere Beach Parkway (Route 16)/Broadway (Route 99)/Main Street (Sweetser Circle), Everett;
- Revere Beach Parkway (Route 16)/Union Street, Chelsea;
- Revere Beach Parkway (Route 16)/Washington Avenue, Chelsea;
- Revere Beach Parkway (Route 16)/Webster Avenue, Chelsea;
- Beach Street/Everett Street/Route 1A/Route 16/Route 60 (Bell Circle), Revere;
- Mystic Valley Parkway (Route 16)/Mystic Street (Route 38), Medford;
- Mystic Valley Parkway (Route 16)/Route 16 Southbound Connector, Medford;

- Mystic Valley/Revere Beach Parkway (Route 16)/Fellsway (Route 28)/Middlesex Avenue (Wellington Circle), Medford;
- Dexter Street/Alford Street (Route 99), Boston;
- Cambridge Street/I-93 Northbound Off-ramp, Boston;
- Main Street/Maffa Way/Cambridge Street/Alford Street (Sullivan Square), Boston;
- Rutherford Avenue/Austin Street, Boston;
- Rutherford Avenue/Route 1 Connector, Boston;
- Rutherford Avenue/I-93 Ramps/Chelsea Street (City Square), Boston; and
- Cambridge Street/Spice Street/MBTA Busway, Boston.

Sullivan Square and Rutherford Avenue

MassDOT, in its comments on the FEIR, identified a number of concerns regarding the proposed mitigation, the analysis provided, the conceptual geometric plans, and the potential for operations at the 1-93 northbound ramp at Cambridge Street to be compromised as a result of the proposed improvements.

The City of Boston comments on the FEIR objected to the proposed mitigation as inconsistent with its long-term plans and echoed comments identified by MassDOT regarding the analysis and modeling. The comments also describe the City of Boston's planning process to define improvements for Sullivan Square and Rutherford Avenue that are intended to enhance the urban environment with greater pedestrian connectivity and new land development opportunities. The proposed $100 million roadway improvement project would remove existing roadway grade separations that form a barrier for pedestrian and bicycle travel eastwest across Sullivan Square and Rutherford Avenue. The plans will reduce the vehicle carrying capacity of the transportation system in order to create a more functional, safe and complete network for pedestrians and bikes. In addition, the Rutherford Avenue corridor project has advanced to the conceptual design stage after a comprehensive public participation process, and a preferred alternative was identified in 2012. Federal funding has been earmarked for this project. The design would reduce the roadway from three to two lanes in each direction, eliminate six bridges to create at-grade intersections, and provide improved pedestrian, bicycle, and public transit accommodations. As these planning processes occurred prior to the proposed Casino, the designs did not take into account the trips associated with the Wynn Casino Resort.

The FEIR strongly encouraged the Proponent to convene joint meetings with MassDOT, DCR and municipalities to address short and long-term mitigation issues. In particular, a joint meeting with the City of Boston and MassDOT was identified to address Sullivan Square and Rutherford Avenue because of the significant concerns stated by MassDOT and the City and their responsibility for reviewing and permitting proposed mitigation.

The SFEIR identifies interim mitigation for Rutherford Avenue and Sullivan Square to address project impacts. Long-term mitigation consists of a $25 million contribution towards the City of Boston's transportation plan. Interim mitigation for the Rutherford Avenue corridor consists primarily of traffic signal modifications at the Route 1 ramps intersection, minor geometric improvements at the Spice Street intersection, and geometric improvements and traffic signal improvements at the Maffa Way intersection. Interim mitigation for Sullivan Square includes geometric design, safety, and traffic operations improvements are proposed for Sullivan Square interim improvements. In particular, a

proposed triple right-turn at the Cambridge Street eastbound approach to Maffa Way has been eliminated and replaced with a more conventional two-lane approach. The SFEIR also commits to reconstruct Spice Street and D Street to re-route traffic from Cambridge Street and Maffa Way destined for Rutherford Avenue southbound to relieve congestion at the Maffa Way/Cambridge Street /Alford Street/rotary. The construction of the Beacham Street Extension to improve bus operations and circulation at the MBTA Sullivan Square Station will also provide similar benefits by removing traffic along the Rotary. All proposed improvements along Cambridge Street, Alford Street, and at Sullivan Square include pedestrian and bicycle accommodations that are linked to proposed or existing pedestrian and bicycle networks that would connect to the Wynn Casino Resort.

No vehicular traffic capacity improvements are proposed in Sullivan Square (at the rotary) itself. The SFEIR indicates that the mitigation will divert trips from the rotary to the upgraded roadway links in sufficient numbers to offset the anticipated increase in new traffic in Sullivan Square associated with the resort.

The SFEIR also commits to improvements to be implemented by the Proponent that include the reconstruction of the lower busway and the parking field to create a new circulation pattern for the bus station, and modifications to both pedestrian and MBTA buses circulation within the station. These improvements would connect with the street network with a new signalized busway exit opposite the I-93 northbound off-ramp on Cambridge Street for right-turning buses, and a new signalized entrance at Maffa Way allowing buses to circulate into the station from Beacham Street Extension and Main Street. The SFEIR also includes an evaluation of the feasibility of providing two-way access between the Sullivan Station MBTA Busway and the Charlestown Bus Garage by Beacham Street and signalizing its intersections with Main Street and Maffa Way.

The SFEIR includes revised conceptual plans and updated capacity analysis, based on data collected in December 2014, for the proposed interim improvements. The LOS at all signalized intersections will improve from at worst LOS F in the No Build Condition to LOS E in the Build with Mitigation Condition for all time periods. The overall LOS of the Cambridge Street/I-93 northbound off-ramp will operate in the Build with Mitigation Condition at LOS C for all time periods, unchanged from the LOS for the No Build Condition. The overall LOS of the main intersection of Sullivan Square, the intersection of Maffa Way, Cambridge Street, and Alford Street, will, in the Build with Mitigation Condition, improve to LOS E during the Friday p.m. peak hour and LOS D during the Friday p.m. real peak hour, compared to LOS F under the No Build Condition. It will continue to operate at LOS D during the Saturday afternoon peak hour in the Build with Mitigation Condition. The intersection of Rutherford Avenue and the Route 1 Ramps will continue to operate at LOS E during the Friday p.m. peak hour in the Build with Mitigation Condition.

The SFEIR concludes that project impacts will not further degrade operations within this area, compared to the No-Build Scenario and that impacts to I-93 will be avoided. However, I note that under No-Build and Build With Mitigation Condition, overall operations at some intersections operated at a degraded level of LOS E and LOS F and are over capacity. Although Build with Mitigation improves overall operations, many of the individual movements within these intersections are degraded further under the Build with Mitigation Condition (e.g. increases in delays, increases in volume to capacity ratios).

The Proponent consulted extensively with MassDOT and the MBTA since the FEIR. In addition, the Proponent met separately with the City of Boston and BTD. The SFEIR indicates that the Proponent has worked hard to reconcile differences between these stakeholder's suggestions. The SFEIR does not identify what required reconciling or identify how the resulting mitigation balances competing concerns. 5
The Response to Comments document does not acknowledge why the recommended consultation, which would provide a more direct way to reconcile competing concerns, did not occur. It is unclear whether the Proponent attempted to convene a joint meeting to reconcile differences and was unable to secure participation from the parties or if other reasons prevented such a meeting. Regardless, a joint meeting was not held.

Comments from MassDOT reflect this consultation and indicate that interim plans have significantly progressed in regards to geometric design, safety and traffic operations of the interim improvements. In particular, the letter notes the elimination of the triple right turn lane, reconstruction of Spice Street and D Street, construction of the Beacham Street Extension, and inclusion of pedestrian and bicycle connections with links to existing or proposed networks. MassDOT indicates that, based on the analysis, traffic operations would operate with acceptable LOS and delay; however, they question whether queuing can realistically be accommodated due to the proximity of the intersection within the area and the limited availability of vehicle storage. In addition, they indicate that a clear determination by the City of Boston as to their final plan for the corridor and a schedule for implementation would best address long-term mitigation for the Rutherford Avenue corridor.

Comments from the City indicate that the analysis and proposed mitigation does not sufficiently address its concerns and that the proposed interim improvements will, rather than mitigate impacts, will degrade operations in the short-term. I note that these comments are echoed by the City of Somerville. The City of Boston asserts that their concerns are regarding issues of feasibility, viability and compatibility and that they are not minor design details that can or should be deferred to permitting.

Specific comments from the City of Boston, based on analysis provided by its peer review consultant, note that the City did not have an opportunity to address underlying assumptions (assignment, intersection operations, signal coordination, and queuing impacts) or to participate in model development and calibration process for this complex modeling effort. The letter indicates that they requested AM peak hour traffic operations data prior to providing feedback and adequacy of mitigation which was not provided. They note that spillover effects and queuing will result in poor operations. It notes that a key element of this plan is the introduction of left-turns from Cambridge Street eastbound into the MBTA station via Beacham Street Extension and on to Maffa Way and Main Street. 6
City of Boston comments indicate that it has investigated upgrading this roadway link and concluded that the introduction of left-turns at this location would be problematic because the close proximity of this intersection to the Cambridge Street intersection with the 1-93 off-ramp would creating weaving and queuing problems. Traffic turning right from the ramp and then looking to turn left into Beacham Street Extension would get trapped and block through travel lanes on Cambridge Street. Accordingly, the City's plan for this location limited left turns to buses only. These comments also question the allocation of a large number of vehicle diversions to Spice Street and D Street to avoid delays entering Sullivan Square because, they note, the route is available today and sees very little use. They assert that proposed upgrades will not increase capacity or improve travel times.

In addition, the City of Boston comments identify concerns with the existing peak hour vehicle queues on Cambridge Street which begin at the Sullivan Square rotary and extend beyond the I-93 off-ramp. The SFEIR reports that the rotary intersection will operate at 114 percent of capacity during the Friday, PM peak hour which the City asserts demonstrates that there will continue to be a problem. The letter identifies concerns that the proposed signalization of the Beacham Street/Main Street intersection will stop westbound Main Street traffic and create vehicle queues. Given the curved alignment of the roadway leaving the Sullivan Square rotary, sight lines may be limited to the back of the queue and create a safety problem. 7

Comments from residents are consistent with the City's comments and express significant concerns with the project's traffic generation and its impacts on long-standing plans that were developed with active participation and support of residents.

MassDOT has expressed concerns that the City's vision for Sullivan Square and Rutherford Avenue and the Proponent's plans are not properly aligned. MassDOT has called for a SSFEIR, in part, to support a process to develop long-term improvements. This process would include participation by MassDOT, MGC, the Proponent and the City of Boston. The success of this effort will be dependent on the active and constructive participation by all of the participants. I expect that all of the parties will participate constructively; however, building consensus with parties engaged in active litigation will be a significant challenge.

Lower Broadway/Alford Street (Route 99)

Lower Broadway (Route 99) will be reconstructed between Revere Beach Parkway (Route 16) and the primary access drive to provide a four-lane cross-section (two lanes each direction) with additional turning lanes provided at major intersections, and sidewalks on both sides. Two left turn lanes are proposed on Alford Street to access the site.

Comments during the FEIR identified concerns with queuing and adequate vehicle storage capacity as well as potential impacts to upstream intersections, in particular during the Friday PM peak period. In addition, comments from the City of Boston during the FEIR expressed concern with the feasibility of the access improvements, including required land acquisitions, and whether adequate capacity could be provided to meet travel demands without degrading operations on Alford Street.

The SFEIR describes that the Proponent worked with Mass DOT and the City of Everett to reevaluate the traffic mitigation along the Route 99 corridor (Broadway and Alford Street) to address previously identified unacceptable service levels, congestion, delays, and queues. The SFEIR included a revised analysis, which generally indicates that traffic operations along the corridor would operate at acceptable LOS and delay, and overall corridor travel time would be favorable to bus operations. The Proponent has also committed to provide the MBTA with a Priority Signal System to all buses along this corridor and to equip all the signalized intersections accordingly. The improvements proposed along Route 99 also include accommodations for bicycles and pedestrians that would link the Wynn Casino site to existing pedestrian and bicycle networks.

The intersection of the Project's Main Entrance/Mystic Street/Broadway (Route 99) was analyzed only in the Build (2023) Condition and the Build (2023) Condition with mitigation because the

intersection does not exist in either the Existing (2013) or No-Build (2023) Conditions. The analysis shows that, in all three peak hours analyzed, this intersection in the Build (2023) Condition with Mitigation will operate at an overall LOS C or better. Both the 50th and 95th percentile queues will be accommodated by the available queue storage. The intersection of Beacham Street and Broadway was analyzed in the No-Build, Build (2023), and Build (2023) with Mitigation Conditions. That analysis shows that the intersection of Beacham Street/Broadway (Route 99) will operate at LOS F in the No Build Condition during the Friday PM peak hour and LOS D in the No Build Condition during the Saturday afternoon peak hour. The analysis shows that the intersection will operate at LOS D in the Build with Mitigation Condition (2023).

The intersection of Bowdoin Street and Broadway (Route 99) was analyzed in the No Build (2023), Build (2023), and Build (2023) with Mitigation Conditions. That analysis shows that this intersection will operate at LOS B in the No Build Condition during the Friday peak hours, and LOS A during the Saturday afternoon peak hour. It will operate at LOS A in the Friday peak hour, and Saturday afternoon peak hour.

Wellington Circle

The Proponent will provide $1.5 million towards a study of long-term improvements to address existing deficiencies. The SFEIR identifies interim improvements consisting of a combination of traffic signal upgrades and geometric improvements to address the project's traffic impacts. In addition, it will include sidewalks and landscaping. Specific geometric improvements would include the widening of the Route 16 approaches and the provision of an additional left-turn lane on the Route 28 northbound approach.

The analyses indicates that in the No Build Condition, during the Friday p.m. peak hour, the western, eastern, and northern intersections of Wellington Circle will operate at LOS F, LOS E, and LOS B, respectively. In the Build with Mitigation Condition these intersections will operate at LOS D, LOS D, and LOS B. In the No Build Condition, during the Saturday afternoon peak hour, the western, eastern, and northern intersections of Wellington Circle will operate at LOS E, LOS C, and LOS C, respectively. In the Build with Mitigation Condition, these three intersections will continue to operate at those levels of service. In the No Build Condition, during the Friday p.m. real peak hour, the western, eastern, and northern intersections of Wellington Circle will operate at LOS F, LOS E, and LOS B, respectively. In the Build with Mitigation Condition, these three intersections will operate at LOS D, an LOS D, and LOS B, respectively.

MassDOT comments indicate that it supports the proposed interim mitigation and that the study is necessary to address effective alternatives for addressing existing operational deficiencies. Previous comments from DCR note that the system appears to be at or near the limit of at-grade solutions. In addition, DCR noted concerns that the proposed improvements would impact existing open space and would require tree removal. DCR comments on the SFEIR indicate that the revised mitigation has addressed concerns regarding impacts to open space. 8

Comments from the City of Medford identify several concerns with traffic, including questions regarding the process, funding and timing of the study and its relation to the schedule for casino

development. In addition, they identify concerns that impacts are underestimated and do not account for the likely impacts of queuing on City streets and I-93.

Santilli Circle, Everett

The alternative presented in the FEIR consisted of modifying the signalized rotary to construct a flyover ramp from Route 16 eastbound to the Route 16 Frontage Road. It also included an enhanced, accessible pedestrian path along the western and northern sides of the rotary and across Mystic View Road and Santilli Highway. To address concerns by DCR, MassDOT and others, the Proponent has presented a new at-grade intersection alternative. This alternative is more consistent with DCR and MassDOT's preference for at-grade solutions that reduce long term maintenance costs and eliminate the visual impacts of an elevated structure along Revere Beach Parkway. It will consist of a combination of at-grade geometric improvements, traffic signalization, lane configuration modifications, and pavement markings and raised islands to reduce weaving with the rotary; new guide signage; and signal timing and phasing adjustments to address safety and operations of the rotary.

Santilli Circle was analyzed in the No Build (2023), Build (2023), and Build (2023) with Mitigation Conditions. The analysis shows that the western signalized intersection at Santilli Circle will operate at LOS B in the No Build Condition during the Friday peak hour, LOS A during the Saturday peak hour, and LOS B in the Friday real peak hour.

DCR comments note that this proposal will retain the parkway character along this section of Revere Beach Parkway compared to the grade separated proposal. In addition, DCR indicates that the traffic characteristics at Santilli Circle are very different for weekday traffic than weekend traffic due to higher volumes of shoppers and lower volumes of regional commuter traffic. DCR recommends that the Proponent develop a separate timing plan based on actual weekend (holiday season) traffic counts.

Comments from MassDOT indicate that the Proponent should refine the design, improve lane utilization and optimize guide signage location to ensure that casino patrons, a number of which will be unfamiliar with the area, can maneuver safely and efficiently through the rotary. 10

Revere Beach Parkway (Route 16) Intersections, Chelsea

The Revere Beach Parkway (Route 16) will convey patrons and employees to the Project Site from the north and east. Improvements include adjustment of phasing splits and upgrades to traffic equipment at the Washington Avenue intersection and Webster Avenue/Garfield Avenue intersection. The proposed mitigation at signalized intersections along Revere Beach Parkway in Chelsea includes upgrading traffic signal equipment along with signal timing and phasing adjustments to improve traffic flow.

The Revere Beach Parkway (Route 16) intersections in Chelsea were analyzed in the No Build, Build (2023), and Build (2023) with Mitigation Conditions. That analysis shows that the intersection of Revere Beach Parkway (Route 16) and Washington Avenue will operate at overall LOS F in the No Build Condition during the Friday "real" peak hour, and overall LOS C during the Saturday afternoon peak hour. The same analyses show that the intersection of Revere Beach Parkway (Route 16) and

Washington Avenue will operate at overall LOS D in the Build with Mitigation Condition during the Friday PM peak hour, and overall LOS C during the Saturday afternoon peak hour.

At Revere Beach Parkway (Route 16)/Webster Avenue/Garfield Avenue the analysis shows that the intersection of Revere Beach Parkway (Route 16) and Webster Avenue/Garfield Avenue will operate at overall LOS F in the No Build Condition during the Friday PM peak, and overall LOS E during the Saturday PM peak hour. In the Build with Mitigation Condition, it will continue to operate at LOS F during the Friday PM peak hours, but with slightly less delay than the No Build Condition. The analysis indicates that the intersection will operate at LOS E in the Saturday PM peak hour but with slightly less delay than in the No Build Condition.

DCR comments request revisions to the plans to reduce accidents at the Revere Beach Parkway at Garfield and Webster Avenues intersection, as requested in comments on the FEIR. In the SFEIR, the Proponent concluded that left turns can be made simultaneously from Garfield Avenue and Webster Avenue with the existing intersection geometry and that split phasing is not necessary. DCR comments note traffic congestion and documented accident history are associated with these simultaneous left turning movements, and that consideration of additional solutions is necessary. 11

Sweetser Circle, Everett

The SFEIR identifies improvements to Sweetser Circle to improve lane utilization and guide motorists through the rotary more efficiently. The SFEIR identifies design refinements and addresses previous discrepancies in performances measures.

Sweetser Circle was analyzed in the No Build (2023), Build (2023), and Build (2023) with Mitigation Conditions. The results of the analysis indicate that the rotary is expected to operate at acceptable LOS and delay upon implementation of the geometric and traffic improvements. One of the specific areas of concern identified by MassDOT in the FEIR comment letter was queues on the off-ramp from Route 16 westbound to Sweetser Circle. According to the capacity analysis and the associated traffic simulation results, these queues are expected to be within acceptable range for all peak periods. Comments from DCR indicate support for the improvement and note that mitigation will improve conditions at this location.

Although the Proponent has proposed an alternative for providing bicycle access, many comments express concern with the design and indicate it will not provide effective or safe access. It requires bicyclists to dismount as they approach Sweetser Circle and walk on sidewalks to ramp down to the bike path on Route 99. Comments from MassDOT indicate that right-of-way limitations present a challenge to providing full accommodations. MassDOT will work with the Proponent during permitting to determine whether an alternative that will provide full accommodation of cyclists can be developed. 12

Bell Circle

The Proponent has committed to traffic signal equipment, signs, and pavement marking upgrades to improve safety and meet current design standards. The SFEIR includes an updated evaluation of associated performance measures to gauge the effects of these improvements.

Transit

The Scope for the SFEIR required the Proponent to demonstrate that traffic mitigation would not affect the bus service provided in this area, to consult with the MBTA regarding the shuttle bus system to avoid duplication and potential conflicts with MBTA services and associated infrastructure, and to provide a revised analysis of the project's potential impact on Orange Line service.

The SFEIR presents updated information on impacts relating to the use of shuttle buses to the MBTA stations. The Proponent has conducted site visit at all MBTA stations with appropriate staff to discuss what type of improvements could be made to the existing station and bus network to facilitate greater usage of transit to access the project. The SFEIR provides updated information on how its service schedule would align with the Orange Line schedule at Wellington Station, the capacity of the shuttle system to accommodate both patrons and employees, and the frequency of service to make it a viable alternative for employees and patrons. The SFEIR includes detailed conceptual plans that indicate the possible locations for shuttle pickup and drop-off at both Malden Center Station and Wellington Station. As part of this effort, the Proponent will redesign the existing parking lot at Wellington Station to provide new berthing spaces for the Wynn Casino Resort shuttle system, improve circulation of the existing parking lot, and relocate the layover spaces for MBTA buses.

The SFEIR includes transit analysis for the three existing bus routes that travel along Route 99 between the station and the project site, with stops very close to the site. Bus Routes 104, 105, and 110 operate near the site, with headways varying widely from 15 minutes to 70 minutes. According to the SFEIR analysis, the routes have sufficient capacity to accommodate additional employees and casino patrons should they elect to use Sullivan Square. However, the Proponent has committed to a shuttle service from Wellington Station that will be a more attractive option to both employees and patrons.

The SFEIR includes a revised analysis of projected Orange Line peak loads for weekday and weekend service days between Wellington and Back Bay Stations. The projections indicate that loading standards would be violated at least during the Friday PM peak for the project. The SFEIR does not consider provision of an operating subsidy to the MBTA to support service and capacity improvements on the Orange Line. I note the importance of robust and dependable transit options to the attainment of mode share goals and MassDOT's comments that a subsidy is necessary to mitigate the projects impacts. 13

The SFEIR includes detailed conceptual plans that indicate the possible locations for shuttle pickup and drop-off at both Malden Center Station and Wellington Station. These plans are of conceptual nature; however, MassDOT comments indicate that they are generally consistent with MBTA codes and standards related to the Americans with Disabilities Act (ADA), the Massachusetts Architectural Access Board (MAAB), and the Federal Transit Administration (FTA) regulations and guidance.

As required, the SFEIR demonstrates how pedestrian crossings and bus stops are coordinated to ensure safe and accessible travel for bus customers specifically from the existing MBTA bus stops along Broadway to the facility. The operations of the traffic signals for the associated intersections have taken into consideration the locations of the bus and the pedestrian crossing movements and provided adequate pedestrian signal timing and phasing as part of the overall intersection analysis. MassDOT states in its comments that the resulting capacity analysis summary table indicates that the Broadway corridor will

operate at acceptable LOS and delay with MBTA buses experiencing improved corridor travel time. I note that City of Boston comments disagree with the conclusions of the traffic analysis and express concern with signal timing, queuing and safety. 14

Private Shuttle Service

The SFEIR includes commitments for a shuttle bus system to connect the MBTA Orange Line stations at Malden Center and Wellington to the site; a proposed "Premium Park and Ride" shuttle service from the Massport Logan Express parking lots located in Braintree, Framingham, and Woburn to the project site.

Pedestrian and Bicycle Accommodations

The transportation analysis has identified the routes that would experience a significant increase in pedestrian activity as a result of the project. To accommodate the increase and also encourage both casino patrons and employees to consider walking as an option, the Proponent has proposed new pedestrian facilities and/or upgraded existing facilities that provide connections to the site. In the Sullivan Square area, the Proponent will construct new sidewalks along the Beacham Street Extension and reconstruct/upgrade all the sidewalks where improvements are proposed within Sullivan Square. The pedestrian route from Sullivan Station to the Wynn Everett casino facility will be upgraded in its entirety to improve the pedestrian experience for casino patrons and employees. These improvements will include associated pedestrian signals and crossings at all intersections along the corridor with particular attention provided to pedestrian at the project site drive, which is expected to experience a significant amount of pedestrian, bicycle, and vehicular activities. The bus stops along Route 99 were located in consultation with the MBTA to safely and effectively connect to pedestrian facilities.

There has been a longstanding interest in providing a pedestrian connection from Assembly Square to Everett either on the Amelia Earhart Dam or as a stand-alone structure. The Proponent has committed to funding a study for a potential pedestrian connection between the MBTA Assembly Row Station and the Wynn Casino Resort over the Mystic River.

The project will include significant improvements to bicycle access including incorporation into roadway designs and construction of multi-use paths along the Mystic River. Comments on the FEIR stated concerns about the feasibility and timing of some improvements including comments the discontinuation of bike lanes at Sweetser Circle. As noted previously, the SFEIR includes a proposal for accommodating bikes through Sweetser Circle.

The Proponent should continue to work with MassDOT and the City of Everett to seek an alternative to connect the bicycle lanes to Route 99, north of Route 16. Further, the Proponent has noted that based on the latest discussions with the City of Everett, the Rail Trail project which would improve bicycle connections along Route 99, is expected to be constructed in the near future. I received many comment letters requesting that the Proponent consider a commitment to design and build an extension of the Northern Strand Community Trail from the terminus at West and Wellington Street in Everett to the Mystic River. I expect the Proponent will consider supporting the completion of this trail and note that this may be an appropriate candidate for funding through the Community Mitigation Fund. 15

Water Transportation

The project includes incorporation of a riverwalk and dock and will provide water transportation between the site and locations in Boston Harbor and will provide transient docking. This commitment provides an excellent opportunity to restore public access to the Mystic River, in an area where little access is currently provided, and support expansion of water transportation within Boston Harbor. Many commenters express excitement about the commitment to this service and the Proponent's aggressive mode share assigned to this service.

The water shuttle service will include stops in Downtown Boston (Long Wharf or Rowe's Wharf) and South Boston (World Trade Center), with potential for expansion to other Boston Inner Harbor locations. The Proponent has committed to build custom boats for the service to ensure that they can pass under the Alford Street Bridge without requiring it to open and to reduce emissions of air pollutants. A water taxi and shuttle dock is proposed to support this service.

Comments on the FEIR and the SFEIR indicate that the mode share attributed to water transportation is very aggressive and many question whether it is attainable. I appreciate the Proponent's serious commitment to this measure and its reflection in the mode share goal. The Transportation Monitoring Plan will be structured to evaluate mode share goals and to provide triggers for considering additional measures if targets for non automobile transportation cannot be reached.

Parking

The FEIR Certificate required the Proponent to reevaluate parking demand and clarify assumptions used to determine the overall on-site parking supply, particularly the source of operation capacity percentages, assumptions about patron length of stay and arrival patterns, and the requirement to achieve a desired LOS for patrons using the parking garage and surface lots.

The SFEIR provides a reanalysis of parking capacity necessary to accommodate patrons and has updated its parking program based on the revised development program and this analysis. The analysis includes more detailed information on the methodology and assumptions used to derive the parking demand for the project. The Proponent expects the proposed TDM program, the proximity of the site to alternative modes of transportation, and the provision of off-site parking for employees would significantly contribute to a reduction of on-site parking demand.

The SFEIR indicates that 3,400 spaces will be provided on site, which is a reduction of 300 spaces. Consistent with the FEIR, all employee parking will be located off-site. The Proponent's analysis indicates that the casino contributes the greatest share to the parking demand relative to other uses at peak. In addition, the SFEIR includes a commitment to evaluate on-site parking pricing strategies.

Transportation Monitoring Program

The Proponent was required to consider comments provided on the Transportation Monitoring Program (TMP), including addition of locations and MBTA bus routes. The FEIR indicates that the TMP would be initiated upon site occupancy and extend for five years after full occupancy. The program will monitor traffic generation and mode share to evaluate the effectiveness of roadway

mitigation and the TDM Program. An annual report will be provided to MassDOT within three months after the completion of the data collection effort for the preceding study period. The report will be used to 1) evaluate the Project with respect to the projected and actual measured impact of the Project on the transportation infrastructure and 2) allow for informed decisions with respect to additional measures (if any) that may need to be undertaken.

Implementation of the TDM Program and monitoring of traffic generation and mode share are particularly important for this project. Trip generation rates and assessment of traffic impacts are based on high alternative transportation mode shares because of its urban location and the Proponent's commitment to promote alternative transportation. The SFEIR indicates that 71% of patrons will arrive by automobile or taxi and 29% will arrive by other modes. For employees, 41% are projected to arrive by automobile and 59% will use alternative transportation.

Mode share goals were reviewed and approved by MassDOT with the understanding that actual trip generation and travel patterns will be tracked through the TMP. If monitoring demonstrates that proposed mitigation is not effective in accommodating the future traffic volumes at key area intersections impacting the state highway system, the Proponent will be responsible for identifying and implementing additional improvements at these locations. These may include improvements to roadway infrastructure and design, adjustments to traffic signal timing and phasing modifications, optimization of the coordinated/interconnected signal system, and/or further refinement of the TDM program to improve its effectiveness. Comments from the City of Boston and others express concerns with the monitoring and also suggest ways to enhance the effectiveness of the program. 16

I support the commitment in the TMP to specific triggers for the addition of TDM measures. The SFEIR indicates that additional measures will be required if any of three conditions associated with increased traffic volumes are exceeded. However, it remains unclear how the Proponent will measure the operational deficiencies at the monitored locations and determine which trips are casino related. Several commenters have raised concerns with regarding improving effectiveness of TMP, including the relatively short 5-year commitment to monitoring. The Proponent should consider comments provided on the TMP and should consult with MassDOT regarding the extension of the monitoring period. 17

Wastewater

The SFEIR indicates that the project will generate an estimated 283,483 gallons per day of new wastewater flows. The Proponent will provide funding to the City of Everett to support infiltration/inflow (I/I) removal requirements. An alternative to this standard mitigation was rejected based on consultation with the City of Everett, MassDEP and the MWRA. The City is implementing an I/I investigation program which is expected to yield specific projects to rehabilitate existing infrastructure and remove I/I from the City's sewer system. MassDEP will continue to monitor the progress of the I/I abatement program in Everett, and the funding commitments of the Wynn project to fulfill the requirements for 4:1 removal for this project.

Waterways/Chapter 91

The site is comprised of flowed tidelands, filled (formerly flowed) tidelands, and non-jurisdictional upland within Everett. Of the approximately 33.9 acre site, approximately 8.3 acres are

flowed tidelands (below MHW), 10.63 acres are filled tidelands, and 14.97 acres are non-jurisdictional upland. On July 29, 2013, MassDEP issued a determination concluding that approximately half of the upland areas of the site are private tidelands and half is non-jurisdictional uplands. A small portion of the south side of the site is located within flowed Commonwealth tidelands. However no work, fill, or structures are proposed in this area.

Most of the retail and restaurant space, and approximately a third of the hotel is within jurisdiction; the remaining portion of the hotel, gaming area, some entertainment space and the parking garage are not within jurisdiction. Approximately 6.26 acres of open space will be located within jurisdiction, including the waterfront promenade, a harborwalk, a gazebo and a large landscaped area at the southern end of the peninsula. The project is considered a nonwater-dependent use (310 CMR 9.12) because it includes nonwater-dependent uses (hotel, casino and mixed-use commercial development) and water-dependent uses (public waterfront open space and dock facilities).

The City of Everett's Central Waterfront Municipal Harbor Plan (MHP) was approved on February 10, 2014. The MHP establishes enhanced and/or alternative standards for waterfront development, access and amenities that are tailored to Everett's specific planning objectives for this area. The MHP includes substitutions for the water-dependent use zone (WDUZ), building height and lot coverage. It allows the reconfiguration of the WDUZ with no net loss of area. It decreased the maximum allowable heights to 55 feet in Zone A, the peninsula portion of the site, and increased the maximum allowable heights to 400 feet in Zone B. The height substitution includes an offset of one new/additional square foot of open space in the MHP area for every square foot of net new shadow. In addition, it allows lot coverage up to 60% with a priority offset of an open space connection between the development site and Gateway Park, and an alternative menu of offsets that include a kayak/canoe launch, fishing pier and walking/bicycle paths.

Previous MEPA submittals have described the public benefits and water-dependent uses that the project will provide including: high quality open space along the Mystic River and a continuous harborwalk along the waterfront; Facilities of Public Accommodation (FPA) on 100% of the ground floor; a water transportation dock; and, extension of the riverwalk from DCR Gateway Park. The extension of the existing waterfront trail and creation of pedestrian and bicycle connections between the site and Gateway Park will include the construction and maintenance of an open space connection under the MBTA tracks. This connection will restore public access to the site, expand public access along the Mystic River to the north, and will support pedestrian access from Wellington Station and pedestrian and bicycle access from other points north.

The SFEIR also included an updated wind and shadow study to ensure that no new net shadow or new net impacts from wind will occur at the ground level within jurisdictional areas as a result of the changes to the hotel tower. MassDEP has stated that although some of the ground floor space has been reconfigured and programming of the ground floor space has slightly changed, the entire ground floor of the nonwater-dependent building within jurisdiction meets or exceeds the areal requirements for Facilities of Public Accommodation (FPAs), and therefore complies with the MHP and Chapter 91 regulations.

It is important to note that while MHPs often contain elements of local planning related to waterfront uses and development, state approval of MHPs is limited to the formal evaluation and

approval of substitutions to specific discretionary standards of the Waterways Regulations. As such, review and approval of MHPs is not intended to consider all of the potential project impacts associated with a development proposal, nor all of the public benefits associated with a project within a planning area. 18

Although the project complies with the c. 91 lot coverage standard, pursuant to 310 CMR 9.51(3)(d), the Proponent has committed to providing the open space connection from the development site to the existing DCR parkland via a connection beneath the existing MBTA railroad bridge. This open space connection shall be reflected in all subsequent state permitting.

As presented in the SFEIR, the project design modifications are consistent with the MHP Decision. Conformance of the proposed project with the approval language and conditions of the MHP Decision will be confirmed by MassDEP in the Chapter 91 licensing process. In addition, a Public Benefits Determination will be issued with the Certificate on the SSFEIR.

Wetlands and Stormwater

The plans for recreating shellfish beds has been eliminated because it is reported that the Division of Marine Fisheries (DMF) would not be able to approve a shellfish restoration project in this prohibited area because the water quality is impaired with high levels of bacteria. The DMF offers alternative areas for shellfish enhancements that would allow the Proponent to fulfill this mitigation commitment. I strongly encourage further consideration of opportunities to improve shellfish resources at more appropriate locations in consultation with DMF.

Previous MEPA filings described the proposed stormwater management system, provided supporting data, calculations and drainage plans to demonstrate consistency with the Stormwater Management Standards. The documents indicated that the proposed system will be designed to meet and exceed the stormwater management standards and the City of Everett's stormwater requirements.

According to the SFEIR, the remaining stormwater issues identified in the comment letters on the FEIR would be addressed in permitting. In the absence of additional information in the SFEIR, the Proponent is reminded that an erosion resistant design of the stormwater outfalls is required for the maximum stormwater discharge velocity, in accordance with the Storm water Management Handbooks, Volume 3, Chapter 1, page 2. The Stormwater Management Standard 1 also is clear that new stormwater outfalls may not cause erosion of wetlands or waters of the Commonwealth. Rip-rap splash pads proposed may not be sited within most coastal wetland resources, except for land subject to coastal storm flowage or riverfront area, in accordance with the wetland regulations in 310 CMR 10.05(6)(k). 19

Greenhouse Gas Emissions

The SFEIR identified the Proponent's commitment to sustainability and included four over-arching objectives:

- Design of a building that will be LEED certified, at a rating of Gold or higher.
- Reduction of GHG emissions through a targeted program.
- Reduction in water and electricity consumption below existing Code requirements.

- Plan for and identify potential effects of sea level rise.

GHG Analysis

The SFEIR included a revised GHG analysis consistent with the MEPA GHG Policy. The Policy requires projects to quantify carbon dioxide (CO_2) emissions and identify measures to avoid, minimize or mitigate such emissions. The analysis quantifies the direct and indirect CO_2 emissions associated with the project's energy use (stationary sources) and transportation-related emissions (mobile sources). The GHG analysis evaluated CO_2 emissions for two alternatives as required by the Policy including: 1) the Base Case and 2) the Mitigation Alternative, which includes all energy saving measures.

The City of Everett has adopted the Energy Stretch Code (Stretch Code) subsequent to its designation as a Green Community under the provisions of the *Green Communities Act of 2008*. Therefore, the project will be required to meet the applicable version of the Stretch Code in effect at the time of construction. The Stretch Code increases the energy efficiency code requirements for new construction (both residential and commercial) and for major residential renovations or additions in municipalities that adopt it. A revised Stretch Code is expected to require energy use in new large buildings to be 12 to 15 percent below the baseline of IECC 2012. While information provided in the FEIR was consistent with the GHG policy (i.e., using the Building Code in effect at the time of the ENF filing), the Proponent revised its model based on the 2010 ASHRAE 90.1 to demonstrate compliance with the current 2012 IECC Code and the potential revisions to the Stretch Code. I requested the revised analysis to provide a realistic assessment of potential GHG reductions in comparison to applicable Code requirements and assist in identifying practicable and meaningful mitigation measures to meet the Proponent's stated sustainability goals and objectives.

The analysis demonstrates that the Project's energy-saving measures will achieve substantial emissions reductions that are equivalent to or better than the Project design evaluated in the FEIR. Building energy use will be 18.3% below the IECC 2012 base. The entire Project's energy use (including building, garage ventilation, garage lighting and water/wastewater utility energy uses) will be 26.4% below the updated ASHRAE 90.1-2010 standards. These energy reductions will exceed the energy reductions modeled in the Final EIR (which were 29.1% but relative to the less stringent 2007 baseline consistent with applicable MEPA scoping requirements, not the more stringent 2010 ASHRAE 90.1 standards).

The reduction in stationary source emissions with mitigation was reported to be 5,744.7 tons per year (tpy) (30.2 percent) in the FEIR. However, the SFEIR (Table 5) reports a smaller reduction of 5,531.8 tpy (27.4 percent). The narrative on the GHG modeling has not identified the sources of this stationary source emissions increase. Although the reduction of stationary source emissions has increased, the transportation emissions reduction remains unchanged from the FEIR at 358.6 tpy (13 percent). This suggests that additional traffic mitigation may be offsetting the increase in traffic volume corresponding with the refinements to the project. Accordingly, avoiding an increase in stationary source emissions, and maintaining or reducing the emissions estimated in the FEIR appears to be a reasonable goal going forward with the project design. To that end, the Proponent is encouraged to consider additional improvements in the energy efficient designs and expansion of the commitment to renewable energy and to incorporate these commitments into revised Section 61 Findings. 20

The DOER notes the adoption of PV, co-generation, and numerous energy efficiency measures will be included and commends the project on both the number and degree of mitigations included. I note that the Section 61 Finding should address clarifications raised in its comment letter from MassDEP and DOER. A revised Section 61 Finding should specify how many EGMs will be low-energy and the EGM total. It also would be useful to provide comparable information on EGM energy use, as was available in the Section 61 Finding for the cogeneration plant, such as clarification of the energy savings expected with the low-energy EGM to be used. 21

Climate Adaptation and Resiliency

The Proponent has assessed the reasonably foreseeable impacts of climate related sea level rise, increased frequency and intensity of precipitation events and extreme heat events on the project site. During the preparation of the FEIR, Draft Preliminary Flood Insurance Rate maps (FIRM) were released for the adjacent areas of Suffolk County. New maps have not been proposed for the Project Site. For the purposes of a conservative analysis, the FEIR used the draft FIRM for Suffolk County[3] and the highest scenario from the Boston Harbor Association (TBHA) *Preparing for the Rising Tide* report for an assessment of sea level rise impacts on the project site. These FIRMs propose an increase by one foot to elevation 10 feet (NAVD) during the 100-year storm event. The TBHA highest scenario projects sea level rise of 7.5 feet above current high water, which is elevation 12.35 (NAVD88).

Measures to address potential impacts associated with climate change are identified in the Mitigation Section of this Certificate. One of the changes to the design identified in the SFEIR is the elevation of the west wing from 12'4" to 18'4" NAVD88, which will be consistent with the rest of the first floor building elevation. The Proponent will consider additional measures during subsequent design. These may include: rain gardens and swales; flood-proof construction; elevation of structures above design flood elevations; prevention of water infiltration; protection for service equipment (HVAC, electrical, fuel, water, sewage); installation of back-water flow values and sump pumps; protection of entrances from snow and ice; enhanced building insulation; cool/green roofing; resilient back-up power and systems; backup power sources for elevators; insulation of refrigeration equipment; and, elevation of utility hook-ups, mechanical devices, electrical service panel, water heaters, and IT services above potential flood levels.

<u>Massachusetts Contingency Plan</u>

The SFEIR includes an overview of remediation of the site (Release Tracking Number (RTN) 3-13341) by MassDEP. In addition, the Proponent has addressed remediation in more detail through public meetings. MassDEP comments note that portions of previously identified disposal sites are located within the MBTA parcels. The SFEIR does not address remediation of these areas. The project Proponent is advised that the construction of the service road and shared entrance must comply with all applicable requirements of Massachusetts General Law, Chapter 21E (M.G.L., c.2IE) and the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. The Proponent should consult with MassDEP regarding associated changes to its remediation plans and consistency with the MCP. 22

[3] The draft FIRM for the applicable Middlesex County Panel had not been released at the time the FEIR was filed. The Suffolk County Panel was used in the analysis.

The SFEIR identified mitigation measures including estimated costs and the timing of implementation and included revised Draft Section 61 Findings for each State Agency that will issue permits for the project.

Mitigation and Section 61 Findings

The FEIR and the SFEIR identify the following measures to avoid, minimize and mitigate environmental impacts:

Transportation

Offsite Improvements – Everett
1. Revere Beach Parkway (Route 16)/Mystic View Road/Santilli Highway/Route 99 Connector Improvements (Santilli Circle): Modify the approach from Frontage Road into the rotary to allow for two formal lanes; Widen circle at Santilli Highway approach to allow for three travel lanes; Provide improved pedestrian and bicycle connection from Frontage Road to Mystic View Road; Reconfigure channelizing island on south side of rotary near Mystic View Road; Provide traffic signal improvements at the signalized locations around the traffic circle; Provide landscaping improvements to the center of the circle; Provide new guide signage and pavement markings; and, perform RSA during 25% design. Work will be completed prior to opening.

2. Route 16/Broadway/Main Street (Sweetser Circle): Reconstruct circle and approaches to function as a two-lane modern roundabout; Reconfigure the existing Broadway (Route 99) northbound approach to allow for three travel lanes providing free flow access to Route 16 eastbound; Provide shared use path on northwest side of rotary to improve bicycle access; Install new signing to provide direction to bicyclists on how to navigate the rotary safely; Provide landscaping and improvements on the north side of the circle; and, maintain pedestrian signal across Route 16 eastbound exit from rotary. Work will be completed prior to opening..

At the following locations (3-11) the Proponent has committed to: Reconstruct Lower Broadway as a 4-lane boulevard with turn lanes at major intersections; Upgrade/replace/install traffic control signals; Reconstruct sidewalks and bicycle lanes where required; Install street trees and lighting; Improve MBTA bus stops along Lower Broadway; Installation of technology along Broadway/Alford Street (Route 99), near project entrance, to allow for signal prioritization for buses.

3. Broadway/ Beacham Street
4. Broadway/ Horizon Way
5. Broadway/ Lynde Street
6. Broadway/ Thorndike Street
7. Bow Street/Mystic Street
8. Bow Street/Lynde Street
9. Bow Street/ Thorndike Street
10. Beacham Street/Robin Street
11. Broadway/ Bowdoin Street

12. Broadway/ Norwood Street/Chelsea Street: The Proponent will optimize traffic signal timing, phasing and coordination.

13. Lower Broadway Truck Route: – Upgrade Robin Street and Dexter Street to serve as a truck route; Provide full depth reconstruction of the existing roadway to accommodate heavy vehicles; Reconstruction of Robin Street and Dexter Street to include heavy-duty pavement, corner radii improvements, sidewalk reconstruction (where present), drainage system modifications (minor), signs and pavement markings.

14. Ferry Street/ Broadway (Route 99): Traffic signal retiming and optimization.

Offsite Improvements – Medford
1. Mystic Valley Parkway (Route 16)/Fellsway (Route 28)/Middlesex Avenue (Wellington Circle): Upgrade/replace traffic signal equipment/signs/pavement markings; Optimize traffic signal timing, phasing and coordination; Widen Route 28 northbound to provide an additional left turn lane; Widen Route 16 westbound to provide an additional through lane in the middle of the intersection; Reconstruct noncompliant sidewalks and accessible ramps around the intersection to improve pedestrian access; Provide landscape improvements.

2. Mystic Valley Parkway (Route 16)/Route 16 Connector: Traffic signal retiming and optimization.
3. Mystic Valley Parkway (Route 16)/Mystic Avenue: Traffic signal retiming and optimization.

The Proponent has committed to contribute $1.5 million to a study of long-term improvements for Wellington Circle.

Offsite Improvements – Boston
1. Alford Street/Main Street/Sever Street/Cambridge Street (Sullivan Square) and at
2. Cambridge Street/I-93 northbound off-ramp: The Proponent has committed to: Optimize signal timing for Maffa Way/Cambridge Street; interconnect and coordinate traffic signals, widen the Main Street approach to provide two lanes; Reconstruct busway between Cambridge Street and Maffa Way; Reconstruct the southbound approach of Alford Street at Cambridge Street; Install new traffic signals at Cambridge Street/Spice Street/MBTA Busway and Maffa Way/Busway; Upgrade/replace traffic signal equipment/signs/ pavement markings; Optimize traffic signal timing, phasing and coordination; Reconstruct Spice Street and D Street; Reconstruct sidewalks on west side of rotary between Sullivan Square station and Alford Street Bridge; Reconstruct sidewalks and upgrade lighting and streetscape in rotary between Cambridge Street and Main Street (east); Provide bicycle lanes on Cambridge Street; Reconstruct MBTA lower busway and parking area at Sullivan Square station, including new traffic signal at Maffa Way/station entrance; Construct BUS ONLY left-turn lane from Main Street into Sullivan Square Station.

3. Traffic Signal Interconnect Conduit from Sullivan Square to Austin Street: Install conduit, pullboxes, and wiring.

4. Dexter Street/Alford Street (Route 99): Upgrade/replace traffic signal equipment/signs/pavement markings; and, Optimize traffic signal timing, phasing, and coordination.

5. Rutherford Avenue (Route 99)/Route 1 Ramps: Optimize traffic signal timing and phasing.

6. Sullivan Square Landscaping: Improve landscaping within the rotary at Sullivan Square and immediately north of the rotary adjacent to Rutherford Avenue

Long-term Commitment to Sullivan Square: Provide payments of $2.5 million per year into the Sullivan Square mitigation fund ($25 million over 10 years); Provide payments to the City of Boston for each vehicle above Friday afternoon and evening period projections $20,000 per additional vehicle trip, not to exceed $20,000,000 over 10 years; Monitor and Report no later than 30 days after the first anniversary of Project opening and for 10 years.

Offsite Improvements – Revere:
1. Route 16/Route 1A/Route 60 (Bell Circle): Upgrade/replace traffic signal equipment/signs/pavement markings; and, Optimize traffic signal timing, phasing and coordination.

Offsite Improvements – Chelsea:
1. Route 16/Washington Avenue: Upgrade/replace traffic signal equipment/signs/pavement markings; optimize traffic signal timing, phasing and coordination.

2. Route 16/Everett Avenue and 3. Route 16/Webster Avenue: The Proponent has committed to optimize traffic signal timing, phasing and coordination.

Transportation Demand Management

- Membership Fee with a Transportation Management Association
- Employ a designated Transportation Coordinator for the Project to coordinate efforts, monitor success rates, and manage strategic implementation of traffic reduction programs;
- Schedule employee shift beginnings and endings outside specified peak traffic periods;
- Carpool/vanpool matching programs;
- Dissemination of promotional materials, including newsletters about TDM program in print at the Project's onsite Transportation Resource Center, and online;
- Orange Line Shuttle Service to Wellington and Malden Center stations and associated improvements to support curbside shuttle service at Wellington Station and Malden Center Station;
- Employee Shuttle Buses;
- Premium Park & Ride Shuttle Buses;
- Neighborhood Shuttle Buses;
- Water shuttle service to the Project Site;
- On-site Full Service MBTA Fare Vending Machine;
- Participation in the MBTA Corporate Pass Program to the extent practical and as allowable pursuant to commercial tenant lease requirements;
- Electric vehicle charging stations within the proposed parking garage;
- Car sharing services in the garage at the Project Site;
- Preferential parking for car/vanpools and alternatively fueled vehicles; and,

- Offering a "Guaranteed-Ride-Home" in case of emergency to employees that commute to the Project by means other than private automobile.

Wastewater

- Financial contribution to remove Infiltration and Inflow (I/I) equivalent to 4 gallons removed for every gallon of new wastewater generated;
- Install grease traps and gas/oil separators.

Water Use

- Incorporates water conservation measures consistent with LEED requirements, including efficient plumbing fixtures, low-flow lavatory faucets and showerheads.
- Rainwater harvesting, grey water reuse and landscaping alternatives;
- Use timers, soil moisture indicators and rainfall sensors to reduce potable water use on landscaping;

Wetlands, Waterways and Water Quality

- Create public access and amenities, including a water transportation dock and continuous harborwalk;
- Remediation, revegetation and enhancement of 550 linear feet of existing shoreline with enhanced living shoreline;
- Removal of invasive vegetation and planting of native herbaceous and shrub vegetation along part of existing Coastal Bank and Riverfront Area;
- Consultation with MassDEP to develop specifications for the living shoreline and bank restoration.
- Transformation of 10,900 +/- SF of disturbed Coastal Beach/Tidal Flats, Coastal Bank, and Riverfront Area to Salt Marsh;
- Dredging to remove contaminated sediments from the harbor bottom and to provide ample draft for water transportation, recreational vessels and a proposed floating dock;
- Debris clean up within LUO, Coastal Beach and Coastal Bank resource areas;
- Replacement of existing bulkhead and construction of new bulkheads within areas of existing degraded Coastal Beach and Coastal Bank areas;
- 100% of the ground floor will be FPAs;
- Extension of the harborwalk off-site to the DCR Gateway Park and to Broadway including construction of a multi-use path, benches, signage, bicycle racks, plantings and lighting; and,
- Contribution of $250,000 to DCR for planning and engineering of a potential pedestrian bridge linking Somerville and Everett over the Mystic River.

Stormwater

- Best Management Practices (BMPs) such as pavement sweeping, deep sump catch basins, tree box filters, filtering bioretention areas, four (4) proprietary stormwater separators, and stormwater media filters will be constructed. These BMPs will be designed to remove at least 80 percent of the average annual load of Total Suspended Solids (TSS)
- Catch basins, silt fences, hay bales and crushed stone will be used during construction to prevent sediment removal from entering runoff

- Offsite mitigation measures associated with transportation improvements may include bioretention or subsurface infiltration chambers, deep sump catch basins or proprietary stormwater separators.

GHG Emissions

- Buildings designed to be LEED-certifiable at the Gold level or higher;
- Energy Efficiency Measures (EEM) estimated to reduce CO_2 emissions from stationary sources by 26.4%, including:
  - Cool roofs;
  - Central chiller plant with better efficiency than Code;
  - Demand Control Ventilation (DCV) for the casino, public entertainment, and retail areas;
  - Energy Recovery Ventilation (ERV) to reduce chiller energy use;
  - Building envelopes with roof and window insulation better than Code;
  - Skylights over the entry atrium and along the retail promenade (daylighting controls will be tied to this extensive system of skylights);
  - Lower light power density 20% better than Code;
  - Low-energy Electronic Gaming Machines (EGMs);
  - Metal halide lighting for all parking structures;
  - High efficiency elevators with regenerative VVVF drives and LED lights;
  - Demand Control Exhaust Ventilation (DCEV) with variable frequency drive (VFD) fans for enclosed parking structures and metal halide lighting for all parking structures;
  - Kitchen and restaurant refrigeration energy efficiency design to reduce energy use;
  - Energy-STAR appliances;
  - Enhanced building commissioning; and
  - Occupancy controls for non-occupied or infrequently occupied spaces.
- PV system on the podium building roof or other locations, and/or purchase from local service providers of Green Power of annual electric consumption equaling 10% of the Project's annual electrical consumption;
- Cogeneration plant using a nominal 1- MW microturbine, providing approximately 20% of the Project's annual electrical consumption (the cogeneration plant is capable of providing 6,307 MWhr/year of on-site electrical generation, supporting 780 tons of absorption cooling, and providing up to 50 percent of the Project's annual heating and hot water needs); and,
- Intersection improvements to reduce vehicle idling and TDM measures to reduce trips will reduce Project-related motor vehicle CO_2 emissions by 13.0%.

Climate Change Adaptation and Resiliency

- Elevate proposed structures to a minimum of 3.35 feet above the 100-year flood level.
- Parking garages entrances and other openings into below grade spaces will be elevated, as noted above, or incorporate sufficient flood–proofing to avoid damage from coastal storms; and
- Critical infrastructure and HVAC equipment will be elevated above projected flood levels.
- The Proponent will consider additional measures during subsequent design including, but not limited to: rain gardens and swales; protection for service equipment (HVAC, electrical, fuel, water, sewage); installation of back-water flow values and sump pumps; protection of entrances from snow and ice; enhanced building insulation; cool/green roofing; resilient back-up power

and systems; backup power sources for elevators; insulation of refrigeration equipment; and, elevation of utility hook-ups, mechanical devices, electrical service panel, water heaters, and IT services above potential flood levels.

Air Quality

- Commitment to a robust and comprehensive TDM program supported by the TMP (described in TDM section above).
- Commitment to consult with MassDEP regarding the CHP system prior to filing a permitting application.

Conclusion

Based on a review of the SFEIR, consultation with State Agencies, and a review of comments submitted, I have determined that a SSFEIR is warranted and necessary to ensure the MGC and State Agencies have sufficient information regarding environmental and transportation impacts and proposed mitigation prior to the taking of Final Agency Actions. The Proponent shall submit a SSFEIR for MEPA review in accordance with the following Scope.

SCOPE

The SSFEIR should follow Section 11.07 of the MEPA regulations for outline and content, as modified by this scope.

MBTA Land Transfer

As noted previously, the MassDOT comment letter clearly acknowledges that the execution of the Land Transfer did not comply with the MEPA Statute and takes responsibility for the premature conveyance of the land. I appreciate that MassDOT has taken responsibility for this error and committed to work with the MEPA Office and the Proponent on the development of appropriate remedies. 23
Remedies will include adequate public review of the process and specific conditions to satisfy and protect in the long-term any potential impacts to MBTA facilities and operations. A remedy may include reversal of the Land Transfer or placement of the property in escrow pending issuance of a Certificate finding that the final review document adequately and properly complies with MEPA and the associated time period has expired.

The SSFEIR must include a description of the parcels subject to the Land Transfer and their relationship to the overall development supported by existing and proposed conditions plan. It should clearly describe the infrastructure and operations associated with the Everett Shops and identify issues 24
that the MBTA has identified as critical to ongoing operations, including protecting the 24 hour nature of the facility, sufficiency of access and internal circulation, and identify any measures that should be contemplated to avoid future conflicts between maintenance activities and the casino and hotel.

The SSFEIR should reiterate the description of the bidding process included in the SFEIR and provide supporting documentation including the Notice of Proposal and Request for Response, Offer Letter, Notification of Successful Bidder Letter from MBTA to Wynn, Quitclaim Deed, Easement Agreement, and Closing Statement. 25

The SSFEIR must demonstrate that the Land Transfer will avoid, minimize and mitigate impacts to the facility and its operations. These commitments must relate to the concerns identified by the MBTA and should be incorporated into the MassDOT draft S61 Findings. The draft S61 Findings included in the SFEIR do not specifically address the Land Transfer but, rather, identify overall mitigation proposed for the access and service road which, presumably, is designed to protect those interests. The MassDOT S61 Finding should be revised to separately identify mitigation measures associated with MassDOT Agency Actions (e.g. Vehicular Access Permit) and MBTA Agency Actions (e.g. Land Transfer). 26

The MassDOT comment letter indicates that it will develop procedural remedies to avoid the premature conveyance of Land Transfers in the future. I appreciate their commitment to address this issue and expect that MassDOT will consult with the MEPA Office regarding these procedures.

Impacts to MBTA Operations and Transit

MassDOT and MBTA have determined that, based on the analysis in the SFEIR, the project will have an impact on Orange Line capacity. To ensure that impacts are addressed and to preserve the service and capacity improvements associated with the addition of new Orange Line trains, MassDOT has requested that the Proponent provide an annual operating subsidy. I agree that this subsidy is warranted.

The SSFEIR must include a commitment to an annual operating subsidy. The SSFEIR and draft Section 61 Findings should identify the amount of the subsidy, how the amount was determined and how the funds will be managed and used. 27

Traffic and Transportation

In addition to other issues identified above, MassDOT has requested the SSFEIR to establish a process for integrating the City's long-term plans for Sullivan Square and Rutherford Avenue and the impacts of casino-related traffic. It will require participation by the City, the Proponent, the MGC and MassDOT. I strongly support MassDOT's interest in consulting with the parties to address concerns with the mitigation and identify opportunities to address them more effectively. In particular, this effort will provide an opportunity to understand and reconcile potential conflicts between State and municipal guidance regarding mitigation. The success of this effort will be dependent on the active and constructive participation by all of the participants. I expect that all of the parties will participate in good faith; however, building consensus with parties engaged in active litigation will be a significant challenge beyond my control. 28

Based on a review of the comment letters, additional information and clarification of the modeling development and underlying assumptions would address some of the concerns identified by municipalities. In particular, the SSFEIR should identify and clarify how and for what purposes the 29

Synchro and VISIIM models were used. As requested by the City of Boston, it should provide AM peak hour operations data to the City of Boston based on counts performed in December 2014 and it should address questions regarding inaccurate volume networks.

Lastly, MassDOT and the Proponent should consider the comments from the City of Medford regarding consideration of geometric improvements to address the intersection of Mystic Valley Parkway and I-93 Southbound Exit 31 Off-Ramp and concerns that increased traffic could have a compounding effect on the intersection, particularly given the proximity to I-93 southbound mainline; and provide output data from the VISSIM model for Wellington Circle. 30

Mitigation and Section 61 Findings

The SSFEIR should contain revised and updated mitigation commitments. It should identify clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation. The MassDOT comment letter identified specific tasks the Proponent should complete prior to the permitting process and incorporate into revised draft Section 61 Findings accordingly. In addition, specific commitments associated with the Land Transfer should be incorporated into the Draft Section 61 Findings. 31

All of the identified mitigation commitments should be incorporated into the Draft Section 61 Findings for the MGC license to ensure that the license accurately reflects the significant commitments to environmental mitigation identified in the MEPA process. 32

Responses to Comments

The SSFEIR should contain a copy of this Certificate and a copy of each comment letter received. In order to ensure that the issues raised by commenters are addressed, the SSFEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction. This directive is not intended to, and shall not be construed to, enlarge the scope of the SSFEIR beyond what has been expressly identified in this certificate. 33

The SFEIR provided uneven responses to comments and, in some instances, included incorrect references to sections of the document. The SSFEIR should provide a specific response to each comment letter received, presenting additional narrative and/or quantitative analysis necessary to respond to the comments received, to the extent that they are within MEPA jurisdiction. If other portions of the document substantively respond to individual comments, the Proponent may reference sections of the SSFEIR; however such responses must include page and paragraph references to assist the reader in review and should not reference wholesale sections of the document that do not provide a specific response to the comment. I note that in some instances, such as reference to the traffic analysis and methodology, a reference to larger sections is appropriate. 34

Circulation

The Proponent should circulate the SSFEIR to those parties who commented on the EENF, and/or the DEIR, and/or the FEIR, to any State Agencies from which the Proponent will seek permits or approvals, and to any parties specified in section 11.16 of the MEPA regulations. To save paper and other resources, the Proponent may circulate copies of the SSFEIR to commenters other than State Agencies in CD-ROM format or post to an online website, although the Proponent should make available a reasonable number of hard copies, to accommodate those without convenient access to a computer to be distributed upon request on a first come, first served basis. The Proponent should send a letter accompanying the CD-ROM or identifying the web address of the online version of the SFEIR indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. 35

April 3, 2015
Date

Matthew A. Beaton

Comments Received:

03/10/2015	Charles D'Entremont
03/20/2015	Frederick P. Salvucci, MIT Civil & Environmental Engineering
03/23/2015	Mayor Gary Christenson, City of Malden
03/25/2015	Mayor Daniel Rizzo, City of Revere(1)
03/25/2015	Division of Marine Fisheries
03/26/2015	Elizabeth K. Levin
03/26/2015	Massport
03/26/2015	Bike to the Sea, Inc.
03/26/2015	Gardens for Charlestown, Inc.
03/26/2015	John Vitagliano
03/27/2015	Mayor Daniel Rizzo, City of Revere(2)
03/27/2015	The Boston Harbor Association
03/27/2015	Department of Energy Resources
03/27/2015	The City of Boston – Consolidated Comments
03/27/2015	Somerville Bicycle Advisory Committee
03/27/2015	Livable Streets
03/27/2015	Rutherford Avenue/Sullivan Square Advocacy Group
03/27/2015	City of Medford, Office of Community Development
03/27/2015	Massachusetts Water Resources Authority
03/27/2015	Charlestown Lofts Condominium Trust, Board of Trustees
03/27/2015	Stefen F. ad Nancy J. Koury

03/27/2015	Syra Arif
03/27/2015	Ronald V. Campbell
03/27/2015	Teresa Clark, LCSW
03/27/2015	Paul Croft
03/27/2015	Eric & Melissa Garfield
03/27/2015	Christopher C. Greci
03/27/2015	Rachel Grubb
03/27/2015	Tracy Leigh Habury
03/27/2015	Stanley J. Heydrick
03/27/2015	David McCool
03/27/2015	TJ McDonough
03/27/2015	Stephen Morin
03/27/2015	Jeff Mullin
03/27/2015	Mujahid Sait
03/27/2015	Josh Silverstone
03/27/2015	Iva Blazina Vukelja
03/27/2015	Jeanine Woodford
03/27/2015	Mathew Rich
03/27/2015	Alexander A. Colarusso
03/27/2015	Charlestown Mothers Association
03/27/2015	Department of Conservation & Recreation
03/27/2015	Mayor Joseph A. Curtatone, City of Somerville
03/27/2015	The Mystic River Watershed Association
03/27/2015	Office of Coastal Zone Management
03/27/2015	Metropolitan Area Planning Council
03/27/2015	CDR Lawrence J. Russo
03/27/2015	East Coast Greenway Alliance
03/27/2015	John Sanzone
03/27/2015	Ellin Reisner, Ph.D.
03/27/2015	James H. Grafmeyer, DDR Corp.
03/27/2015	Lynne C. Levesque, Ed. D.
03/27/2015	Samantha A. Miko, Esq.
03/27/2015	Lynn Weissman
03/27/2015	Fredrick & Jane Sillman
03/27/2015	Jeffrey Leclair
03/27/2015	Catherine Evans
03/27/2015	Seth Avakian
03/27/2015	Pebble Williams
03/27/2015	Christopher Ferry
03/27/2015	Kate Zebrose
03/27/2015	Susan Mcanneny
03/27/2015	Ryan "Fritz" Holznagel
03/27/2015	Department of Environmental Protection
03/27/2015	Alan Moore
03/28/2015	Thomas W. Lincoln
03/30/2015	Michelle Moon

03/30/2015	Stephen Winslow
03/30/2015	Walter Willett, MD
03/31/2015	Mayor Robert Dolan, City of Melrose
03/31/2015	Melrose Pedestrian and Bicycle Advisory Committee
04/1/2015	Emily & Mark Stoehrer
04/2/2015	MassDOT
04/2/2015	Mayor Carl DeMaria, Jr., City of Everett
04/2/2015	Neil Allwood
04/2/2015	Tea Huot

MAB/ACC/acc

MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
TTY: (617) 788-4971

March 27, 2015

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
Attn: MEPA Office, Anne Canaday
Boston, MA 02114

Subject: Supplemental Final Environmental Impact Report - EOEEA #15060
Wynn Everett, Everett, MA

Dear Secretary Beaton:

The Massachusetts Water Resources Authority (MWRA) is pleased to submit the following comments in response to the Supplemental Final Environmental Impact Report (SFEIR) submitted by Wynn MA, LLC ("the Proponent") for Wynn Everett (the "Project").

As described in the Supplemental FEIR, the Project calls for the creation of a casino development on an approximate 33.9 acre site located at a Mystic River waterfront site off Horizon Way and Lower Broadway (Route 99) in Everett. The proposed resort casino will include a luxury hotel, a gaming facility, retail space, six-restaurants, a night club, convention and meeting space, a gym, and a four-season atrium garden. Other elements of the project include: service space, a 1.25 million sq ft. parking structure, site remediation and removal of contaminated soils and clean-up and restoration, and significant transportation improvements. These transportation improvements include major off-site roadway and intersection improvements on State DOT and DCR roadways – along Route 16, including at Wellington Circle, Santilli Circle and Sweetser Circle, and along Route 99 at Sullivan Square. Improvements are also proposed in the cities of Boston and Medford to address long-standing regional traffic issues.

MWRA comments continue to focus on issues related to wastewater flows, permitting from the Toxic Reduction and Control (TRAC) Department, the likely need for 8 (M) Permit/s from the Water and Wastewater Permitting Field Operations Group.

Wastewater Flows

The SFEIR reports that project refinements since the Final Environmental Impact Report (FEIR) include 125 additional hotel rooms which increase the project's estimated wastewater generation to 283,489 gallons per day. From the time MWRA reviewed Wynn Everett's Environmental Notification Form nearly two years ago – and ever since - MWRA has stated that the casino's wastewater flow impacts must be offset or otherwise mitigated to avoid increasing system surcharging and overflows during large storms. And also since then, we have cooperated with the Wynn Everett team in its

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investigations into means that can provide a level of flow offset or impact mitigation. Wynn Everett's FEIR filed in August 2014 reviewed these two mitigation plans:

1) *a targeted program of infiltration/inflow ("I/I") removal within the affected sewer system in accordance with Massachusetts Department of Environmental Protection's (MassDEP) regulation 314 CMR 12.04(2)(d) on a 4:1 basis of 4 gallons I/I removed for every gallon of new sanitary flow, accomplished either through the Proponent's implementation of sewer system improvements or through the Proponent's funding of sewer system improvements that would be performed by the City of Everett, and*

2) *diversion of flows generated in a portion of the City of Everett from MWRA's Section 24 interceptor, to which Wynn Everett proposes to direct its casino sanitary flow, to MWRA's Section 193 or Section 16 interceptor. MWRA has determined that reconnection of Everett flows to Section 193, especially, would provide benefit in terms of improved system performance that can help reduce sewer system surcharging and overflows to the Mystic River in large storms.*

MWRA staff met with City of Everett officials, Department of Environmental Protection (MassDEP) staff and a Wynn Everett representative at MassDEP's Northeast Regional Office on October 16, 2014. At this meeting, Wynn Everett and the City confirmed that they intended to meet the MassDEP wastewater mitigation requirements by having Wynn Everett provide funds to the City of Everett by which the City would implement system improvements to achieve the 4:1 I/I removal. This mitigation approach is affirmed in the SFEIR. MWRA joins with the City of Everett and MassDEP in supporting this approach contingent upon the flow offset being achieved in a timely manner to avoid impacts, that is, by the time the casino project receives its occupancy permit. MWRA understands that the City of Everett is unable at this time to identify projects that can meet the 4:1 removal requirement, and that the City recently commenced sewer system studies intended in part to identify and develop I/I reduction plans.

We also understand that Wynn Everett is no longer contemplating other sewer system improvements, such as the reconnection of City flows mentioned above, despite Wynn Everett's earlier recognition in its MEPA filings of the environmental benefits of such action and the potential for the work to be implemented in a timely fashion. To ensure that the increase in casino flows do not increase sewer overflows to the Mystic River prior to full implementation of the yet to be identified 4:1 I/I reduction plan, MWRA requests that Wynn continue to implement other sewer system improvements, such as the Everett sewer reconnection to Section 193, in addition to and without reducing its 4:1 I/I reduction efforts with the City of Everett. 1

MWRA remains available to the Proponent and the City of Everett to provide assistance in their development of I/I removal plans or other sewer system improvements that can contribute to avoiding adverse environmental impacts from the proposed casino complex's wastewater flows. We look forward to continuing to work with the City, the Proponent and MassDEP to help achieve this objective.

<u>TRAC Discharge Permitting</u>

As stated in earlier comments, once the hotel is completed, and if the Proponent intends to operate a laundry facility on the premises, an MWRA Sewer Use Discharge Permit will be required for 2

the discharge of laundry effluent into the sanitary sewer system. For assistance in obtaining this permit, the hotel operator should contact Keary Simmerman, Industrial Coordinator in the TRAC Department at (617) 305-5638. This permit must be issued prior to discharging laundry wastewater into the MWRA sanitary sewer system.

The Proponent must also comply with 360 C.M.R. 10.016, if gas/oil separator(s) will be installed in the parking garages. In addition to complying with 360 C.M.R. 10.000, the Proponent will need to conform to the regulations of the Board of State Examiners of Plumbers and Gas Fitters, 248 C.M.R. 2.00 (State Plumbing Code), and all other applicable laws. The installation of the proposed gas/oil separator(s) will require MWRA approval and may not be back filled until inspected and approved by the MWRA and the Local Plumbing Inspector. For assistance in obtaining this approval, please contact Peter J. Yarossi, Regional Manager in the TRAC Department at (617) 305-5671. 3

Section 8 (m) Permitting

Section 8 (m) of Chapter 372 of the Acts of 1984, MWRA's Enabling Legislation, enables the MWRA to issue permits to build, construct, excavate, or cross within or near an easement or other property interest held by the MWRA, with the goal of protecting Authority-owned infrastructure. The Proponent may need to apply for MWRA 8(m) permit/s for future utility, potential new connections to the MWRA sewer system, or roadway improvement work. The Proponent acknowledges in the SFEIR that they will contact MWRA staff (Mr. Kevin McKenna within MWRA's Wastewater Permitting Group at (617) 350-5956 and Mr. Ralph Francesconi in the Water Permitting Group at (617) 350-5827) for permitting assistance early in the process.

Sincerely,

Marianne Connolly

Marianne Connolly
Senior Program Manager,
Environmental Review and Compliance

cc: David Kubiak, MWRA Engineering and Construction
Kattia Thomas, MWRA TRAC
Peter Yarossi, MWRA TRAC
Kevin McKenna, MWRA Permitting, Wastewater Operations
Ralph Francesconi, MWRA Permitting, Water Operations
Carl Leone, Planning
John McLaughlin, Planning
Kevin Brander, DEP
Eric Worrall, DEP
James Errickson, Exec. Director, Planning and Development, Everett
Jamie Fay, Fort Point Associates

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MAPC
METROPOLITAN AREA PLANNING COUNCIL

SMART GROWTH AND REGIONAL COLLABORATION

March 27, 2015

Matthew A. Beaton, Secretary
Executive Office of Energy & Environmental Affairs
Attention: MEPA Office - Anne Canaday, MEPA #15060
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: Wynn Everett, MEPA #15060, SFEIR

Dear Secretary Beaton:

The Metropolitan Area Planning Council (MAPC) regularly reviews proposals deemed to have regional impacts. The Council reviews proposed projects for consistency with *MetroFuture*, the regional policy plan for the Boston metropolitan area, the Commonwealth's Sustainable Development Principles, the GreenDOT initiative, consistency with Complete Streets policies and design approaches, as well as impacts on the environment.

Wynn MA, LLC (the Proponent) proposes a resort and casino that will contain a 629 room hotel, gaming space, retail and dining space, as well as entertainment and meeting facilities. The project is located on approximately 33.9 acres on Horizon Way off Lower Broadway in Everett and abuts Route 99, a major commuter route that provides connections to numerous regional and interstate highways. It is also located within a major transit corridor in close proximity to two MBTA transit stations, Sullivan Square Station and Wellington Station, and a number of bus routes.

Since the filing of the Final Environmental Impact Report (FEIR), the building program has increased by 58,000 square feet to a grand total of 3,096,700 square feet. While the overall building footprint remains the same, changes to the building program include adding 125 hotel rooms, increasing the square footage of the convention and meeting space, eliminating the nightclub, and slightly reducing the square footage of retail and dining space. Since the filing of the FEIR, the amount of on-site parking has decreased by 300 spaces. Of the 4,200 spaces now in the parking program, 3,400 are on-site and 800 are off-site.

The project is forecast to generate 1,332 vehicle trips during the Friday afternoon peak hour (4:30-5:30 PM) and daily vehicle trips will increase to 1,756 during the Saturday afternoon peak hour (2:45-3:45 PM). Although the increased number of trips is not projected to cause traffic impacts during peak hours with the new building program, the estimated number overall daily trips on a Friday is forecast to increase by 3.3%.

MAPC has a long-term interest in alleviating regional traffic and environmental impacts, consistent with the goals of *MetroFuture*. The Commonwealth also has established a mode shift goal of tripling the share of travel in Massachusetts by bicycling, transit, and walking by 2030. Additionally, the Commonwealth has a statutory obligation to reduce greenhouse gas emissions (GHG) by 25% from 1990 levels by 2020 and by 80% from 1990 levels by 2050. This project is likely to make all these goals more challenging to achieve. Therefore, the Secretary faces a special obligation to require all reasonable actions that will minimize or mitigate the substantial adverse impacts of this project and keep the Commonwealth on track in meeting its regulatory and statutory goals.

MAPC has reviewed the Supplemental Final Environmental Impact Report (SFEIR) and has concerns that primarily address the off-site parking program and the need to develop a mitigation program due to increased demand on the public transit system. These issues, proposed recommendations, and questions are detailed as an attachment to this letter. MAPC respectfully requests that the Secretary incorporate our recommendations as part of the SFEIR Certificate issuance and require the Proponent to address our concerns.

Thank you for the opportunity to comment on this project.

Sincerely,

Marc D. Draisen
Executive Director

cc: James Errickson, City of Everett
Gina Fiandaca, City of Boston
Clinton Bench, MassDOT
Jack Murray, DCR

Metropolitan Area Planning Council (MAPC) Comments on
Wynn Everett SFEIR - MEPA #15060

Off-Site Parking Program

Off-Site Parking Locations

Since the Proponent plans to dedicate the majority of on-site parking to patrons, most employees will need to access the project site by public transportation or shuttle services provided by the Proponent. While MAPC is pleased that the Proponent has proposed a shuttle program for employees that will operate between off-site parking facilities and the project site, significant questions remain. According to the SFEIR, up to 800 parking spaces will be provided among three off-site locations – in Malden at a downtown garage, in Medford adjacent to Wellington Station, and in Everett's industrial quadrant southeast of the project site. However, the Proponent has yet to identify the exact allocation of the 800 parking spaces. In addition, the location of the Everett off-site parking facility and its associated shuttle route still need to be determined. MAPC is very concerned that these critical components of the off-site employee parking program have not been provided as part of the MEPA review process. The details of the off-site parking program should be resolved in the subsequent permitting and design phase with the municipalities and any measures required to mitigate impacts at the three sites should be included in the Secretary's Section 61 Findings. 1

MAPC also has concerns regarding the Proponent's conclusions in the SFEIR regarding the planned leasing of space for off-site employee parking. On page 2-86, the SFEIR claims that off-site employee parking will be "sufficient to accommodate the projected employee parking demand of 365 spaces." However, on page 2-75, there is a contradictory statement cautioning that "overlapping employee shifts required to ensure that positions are appropriately staffed may result in parking demands that could be approximately twice that of the projected peak parking demand." The Proponent needs to provide further analysis regarding congestion and capacity issues that could result with employee shift changes at each of the three off-site parking locations. 2

MAPC respectfully requests that the Proponent provide further information pertaining to these additional concerns regarding off-site parking:

- While the proposed parking in Everett will most likely be new parking, the sites in Medford and Malden are in existing and well-utilized facilities. Do these facilities have available capacity for the Proponent's planned use while still serving current parking patrons? Will any current users be displaced, and if so, where will they relocate? Any such displacement should be mitigated by the Proponent. 3
- The traffic impacts and parking demands of the off-site parking program should be determined by on-site monitoring at all three locations, not by simply administering surveys as the Proponent currently proposes. 4
- An estimated 40 private charter buses will access the project site daily. While the SFEIR mentions that private charter buses will pick-up and drop-off riders at the project site, where will they be staged? 5

Premium Park and Ride

The SFEIR mentions that the Proponent plans to operate a Premium Park and Ride (PPR) service that will, if possible, share excess parking at two or three of Massport's Logan Express facilities in Braintree, Framingham, and/or Woburn. PPR service would be modeled on Massport's Logan Express service, which provides a non-stop bus ride between Logan Airport and one of four Massport parking lot locations in Braintree, Framingham, Woburn, and Peabody. The Proponent proposes that both employees and patrons who choose to use the PPR service would not be charged, thus providing an incentive to use the service. If spaces are not available at Massport's Logan Express parking facilities, the Proponent will lease spaces at proximate parking facilities.

While this appears to be a viable concept, additional information needs to be provided which, at a minimum, should identify specific parking locations and associated number of spaces. If a PPR service is implemented, then leases with Massport should be short-term and give priority to accommodate airport patrons, should that demand increase. In addition, the PPR service should be evaluated by on-site monitoring. 6

Transit Demand and Impacts to the Transit Network

While the Proponent has committed to an extensive mitigation program for roadway improvements, mitigation for public transportation is minimally addressed. MAPC believes strongly that transportation impact mitigation should not be limited solely to roadways. The Proponent's project has an integrated public transportation component as part of its transportation program. Although the SFEIR states that MBTA bus and Orange Line operations will satisfactorily serve project patrons and employees, and that the additional ridership will not adversely affect future operations, that is hardly an assurance of optimal performance. In spite of this claim, MAPC believes that public transportation will likely be strained by the substantial addition of new passengers.

To off-set potential impacts, the Proponent should partner with the MBTA by contributing to both the operating and maintenance costs of area bus service and the Orange Line in an amount that is reasonably related to the project's additional demand and its impact on MBTA services. Specific thresholds should be determined collaboratively between the MBTA and the Proponent. It is important to note that *Hub and Spoke*[1], a report recently completed by Northeastern University, concluded that the Orange Line already has congestion and capacity issues. 7

It is also worth mentioning that the SFEIR notes the revised analysis of Orange Line peak loads for weekday and weekend service between Wellington and Back Bay as outlined in MassDOT's FEIR comment letter is unresolved (Table 1.3 MassDOT Coordination Summary, page 1-20). This issue needs to be addressed by the Proponent in concert with MassDOT and the MBTA. 8

Transportation Monitoring Plan

The Proponent proposes an extensive post-development transportation monitoring and reporting program. The program includes annual data collection of traffic counts, parking, public transportation, and travel modes. The Proponent has committed to conducting regular monitoring and reporting of transportation mode shares and adjusting the project's alternative transportation services and transportation demand management (TDM) programs as necessary. The monitoring program will begin prior to initial occupancy of either the hotel or gaming components of the Project, whichever occurs first, and will continue for a period of 10 years. Most importantly, the Proponent agrees to monitor and adhere to a strict mode share goal. Specifically, no more than 71% of patrons and 0% of employees[2] will arrive by automobile respectively. Including the segment of each employee trip in a Single Occupancy Vehicle (SOV), 41% of trips will involve SOV modes and 59% will be via non-SOV modes.

Corrective measures will be undertaken by the Proponent if the monitoring indicates there are operational deficiencies at the monitored locations and if either of the following conditions apply: 1) traffic volumes for the project exceed 110% of the projected volumes or 2) the distribution of project-related traffic from the project site entrance to the roadway network varies by more than 10% of the trip assignment assumed for the project.

As stated earlier, in addition to the on-site data collection proposed in the SFEIR, the transportation monitoring plan needs to include monitoring of the three off-site parking locations to ensure that they are working effectively. If not, the Proponent will need to implement adjustments to the off-site parking program. Furthermore, as indicated above, the PPR program should also include data collection and monitoring if it is implemented. 9

Traffic and Roadway Impacts

The transportation network will shoulder the greatest impact of the proposed project. The project's transportation impacts are major and will have significant effects on the host and surrounding communities, the residents of those cities and towns, local businesses, and people who travel into or through those communities. In order to mitigate the impacts of the proposed development, the Proponent has outlined significant steps designed to improve the roadway network. MAPC is pleased that the Proponent has committed to complete all proposed roadway improvement mitigation prior to project opening.

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[1] *Hub and Spoke*, Core Transit Congestion and the Future of Transit and Development in Greater Boston, Northeastern University, June 2012.
[2] Does not include the limited number of Wynn executives and employees with disabilities.

Summarized below are specific issues MAPC has concerning Route 99 and Sullivan Square/Rutherford Avenue:

Roadway Changes to Integrate Bus Service along Route 99

In addition to serving as a primary access route to/from Boston, Everett, Malden, Medford, and Somerville, three MBTA bus lines (104, 105, and 109) traverse the Route 99 corridor in the vicinity of the proposed project. While MAPC acknowledges that the Proponent proposes relocating bus stops in closer proximity to the project site's primary driveway as well as other improvements such as sidewalks and bicycle lanes, additional improvements are necessary to facilitate bus service along this corridor. Specifically, these improvements include collaborating with the MBTA to ensure bus arrival and departure times are synchronized with employee shift changes, enhanced bus shelters (e.g., with real-time message boards), signal priority for buses, dedicated bus lanes, and other "bus rapid transit" (BRT) features. Enhancing the Route 99 corridor for bus service will encourage patrons and employees accessing the project site to use this mode of transportation. MAPC expects that further integration of bus service will be addressed as the Proponent continues to collaborate with the City of Everett, MassDOT and the MBTA as the design of Route 99 advances, and we urge the Secretary so to require in his Certificate. 10

Sullivan Square/Rutherford Avenue

According to the terms of its Gaming License, the Proponent has agreed to make a payment equal to $25 million toward implementing a long-term solution for Sullivan Square and Rutherford Avenue. In addition, the Proponent has agreed to an annual payment of $20,000 per additional vehicle trip entering and leaving the project using Sullivan Square during the Friday peak hour. This payment is for the first 10 years and is capped at $20 million. According to the SFEIR, discussions are underway with MassDOT, the MBTA and the Boston Transportation Department (BTD) regarding the refinement of the mitigation program as the project moves toward final design and construction.

Congestion at the Exit 28 ramp on I-93 and through Sullivan Square is a significant concern. In its comment letter addressing the FEIR, MassDOT noted that a queue of 667 feet (27 vehicles) would occur on the Cambridge Street eastbound approach during the Friday PM peak hour under the build-mitigated scenario. In the SFEIR, this queue has increased to 727 feet. Showing no improvement compared to No Build conditions, this queue would still extend beyond the I-93 northbound exit ramp and could result in lengthier queues on the ramp itself.

As the Proponent finalizes design plans in consultation with MassDOT, the MBTA, and the BTD, it is critical that they support implementation of the City of Boston's long-term plans for Sullivan Square and Rutherford Avenue. The City of Boston's multi-year effort to create a "new neighborhood" in the City is highly consistent with the Commonwealth's Sustainable Development Principles, the regional plan *MetroFuture*, as well as MassDOT mode-shift goals and Green DOT programs[3]. This vision will likely be compromised by the proposed project's increase in vehicular traffic. It is imperative that this area be closely monitored post-development, and that every effort is made to minimize and mitigate negative impacts that endanger the City's plan for the neighborhood. 11

Pedestrian and Bicycle Access

The Proponent will contribute up to $250,000 to DCR for a study to examine the design of a pedestrian/bicycle connection across the Mystic River linking Somerville and Everett as part of their mitigation program. MAPC supports further study that may advance this potential connection. The primary purpose of this connection is to join one of the key missing gaps in the planned active transportation greenway between the North Shore and Boston. This connection also provides key access between public transportation in Assembly Square and destinations in Everett across the Mystic River.

[3] The Boston Redevelopment Authority BRA and MAPC recently completed a land use study for the Sullivan Square area. The Sullivan Square Disposition Study lays the foundation to create a mixed-use, walkable neighborhood with new housing and business opportunities in close proximity to the Orange Line.

To improve non-motorized access between the site and points north, the Proponent should work with the MBTA to extend the Bike-to the-Sea trail along the MBTA right-of-way beneath Revere Beach Parkway to the project site. This link will provide a safe car-free alternative to the Project site. 12

Parking Pricing Strategies

MAPC is pleased that the Proponent will evaluate and monitor pricing strategies for managing on-site parking in a manner that will appropriately serve visitors while also supporting the goal of reducing SOV trips and encouraging use of public transportation. These strategies include implementing a revenue control system, discouraging parking during peak traffic and parking demand periods, and providing guest rewards for arriving at the site by means of modes other than SOV. Although the SFEIR states that parking pricing strategies will be summarized in an annual report that will be provided to MassDOT and the Massachusetts Gaming Commission, the report should propose adoption of new pricing strategies, if necessary. 13

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

MEMORANDUM

TO: Matthew A. Beaton, Secretary, EEA
ATTN: Anne Canaday, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: March 26, 2015
RE: EEA 15060, Wynn Everett

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Supplemental Final Environmental Impact Report (SFEIR), noticed in the *Environmental Monitor* dated February 25, 2015 and offers the following comments.

Project Description

The proposed project includes the construction of a resort casino on the 32 acre former Monsanto Chemical site along the Mystic River in the City of Everett. The project includes a luxury hotel with 629 rooms, a gaming area, retail space, food and beverage outlets, convention and meeting space, a spa and gym, a parking garage, and other complementary amenities as described in the SFEIR. The project will also include landscape and open space amenities including a public gathering area, pavilion, waterfront features, Harborwalk, and water transportation docking facilities. The proposed project includes shoreline stabilization with a new vertical steel pile bulkhead and the placement of new stone revetment. The project also includes dredging to accommodate vessels and the proposed water transportation docking facilities.

The SFEIR was prepared in response to the Secretary's Certificate on the Final Environmental Impact Report (FEIR) that required the proponent to address issues relating to traffic and transportation and provide a response to comments. The SFEIR indicates that the project design was also refined since the submission of the FEIR. The proposed refinements include design modifications to the hotel tower, 300 space reduction in the number of parking spaces, addition of 125 hotel rooms, elimination of the proposed nightclub, increase in gaming positions, and an increase in the square footage of convention and meeting space as well as retail and food and beverage space.

Project Comments

As detailed in our comments on the Draft Environmental Impact Report (DEIR) and FEIR, the proposed Wynn Everett project is subject to the approvals and conditions contained in the Secretary's February 10, 2014 decision on the City of Everett Central Waterfront Municipal Harbor Plan ("MHP Decision"), which will guide the Department of Environmental Protection (MassDEP) in making regulatory decisions, pursuant to MGL Chapter 91 and the Waterways Regulations. Municipal Harbor Plans (MHPs) afford communities the opportunity to propose modifications to the uniform standards of the Waterways Regulations at 310 CMR 9.00. It is important to note, however, that while MHPs often contain elements of local planning related to waterfront uses and development, state approval of MHPs is limited to the formal evaluation and approval of substitutions to specific discretionary standards of the Chapter 91 Waterways Regulations. As such,

review and approval of MHPs is not intended to consider all of the potential project impacts associated with a development proposal, nor all of the public benefits associated with a project within a planning area.

The Secretary's MHP Decision approved certain proposed Chapter 91 Waterways substitutions for the Wynn Everett project with corresponding offsets as detailed in the MHP Decision and summarized below:

- Water-dependent Use Zone (WDUZ) substitution: Allows the reconfiguration of the WDUZ with no net loss of area.
- Height substitution: Allows up to 55 feet in Zone A and up to 400 feet in Zone B. Offsetting measure is one new square foot of open space for every one square foot of net new shadow.
- Lot coverage substitution: Allows lot coverage up to 60% with a priority offset of an open space connection between the development site and Gateway Park, and an alternative menu of offsets that include a kayak/canoe launch, fishing pier, and walking/bicycle paths.

As presented in the SFEIR, the project design modifications are consistent with the MHP Decision. Conformance of the proposed project with the approval language and conditions of the MHP Decision will be confirmed by MassDEP in the Chapter 91 licensing process. 1

Federal Consistency

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at 617-626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm. 2

BKC/lbe/bvw

cc: Lisa Berry Engler, CZM
Ben Lynch, MassDEP Waterways
Nancy Baker, MassDEP
Tay Evans, DMF
Jamie Errickson, City of Everett
Jamie Fay, Fort Point Associates

dcr
Massachusetts

March 27, 2015

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: Anne Canaday, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: EOEEA #15060 Wynn Everett SFEIR

Dear Secretary Beaton:

The Department of Conservation and Recreation ("DCR" or "Department") is pleased to submit the following comments in response to the Supplemental Final Environmental Impact Report ("SFEIR") submitted by Wynn MA LLC (the "Proponent") for the Wynn Everett project (the "Project").

As described in the SFEIR, the Project proposes construction and operation of a Category 1 gaming establishment. The proposal includes hotel, gaming, retail, restaurant, spa/gym, and convention/meeting space. The Proponent submitted a Final Environmental Impact Report ("FEIR") in June 2014. Changes presented in the SFEIR include an increase of 125 additional hotel keys and approximately 78,000 square feet of hotel space, reductions in square footages for retail, gaming, food/beverage, and entertainment / nightclub uses, and a reduction of 300 total parking spaces. In total, the Project as presented in the SFEIR will construct three million gross square feet of new building space. The SFEIR was submitted in response to a scope that required additional analysis on transportation issues.

DCR owns and operates transportation infrastructure near the Project Site, including Mystic Valley Parkway (which includes Wellington Circle), Revere Beach Parkway (which includes Santilli Circle), the Fellsway, and Mystic Valley Parkway. As presented in the SFEIR, a Construction and Access Permit will be required from DCR. The SFEIR presents alternatives for improvements to DCR intersections and roadways including Wellington Circle, Santilli Circle, sections of Revere Beach Parkway in the City of Chelsea, and Sweetser Circle. In addition, DCR owns and operates the Mystic River Reservation, a 400-acre recreation facility in the municipalities of Arlington, Somerville, Medford and Everett. DCR also operates the Ameila Earhart dam, a flood control structure located on the Mystic River near the Site.

DCR submits the following comments relative to impacts to DCR transportation infrastructure near the Project.

Santilli Circle, Everett
Proposed mitigation at Santilli Circle has changed substantially from the FEIR document. Grade separation proposals have been replaced by an at-grade proposal, which will include geometric changes as well as new guide signs and traffic signal timing and phasing adjustments aimed to improve traffic flow. These simpler improvement proposals have been closely coordinated with MassDOT and should allow for greater retention of the parkway character along this section of Revere Beach Parkway compared to

the grade separated proposal. DCR notes traffic characteristics at Santilli Circle are much different on the weekends (due to higher volumes of shoppers and lower volumes of regional commuter traffic). DCR recommends that the Proponent develop a separate timing plan based on actual weekend (holiday season) traffic counts. This topic could be addressed when a DCR Construction and Access Permit is issued for the Project. 1

Sweetser Circle, Everett
Proposed mitigation at Sweetser Circle includes updated signage and pavement markings to clarify lane usage and paths for motorists as they pass through Sweetser Circle. Bicycle accommodations have been provided on approach roadways but are not carried through the Circle itself (consistent with 2009 edition of MUTCD). These improvements have been closely coordinated with MassDOT. In our review of the SFEIR, it appears the proposed improvements will improve conditions at this location compared to the 2023 Build Condition.

Revere Beach Parkway (Route 16) Intersections, Chelsea
Proposed mitigation at signalized intersections along Revere Beach Parkway in Chelsea include upgrading traffic signal equipment along with signal timing and phasing adjustments to improve traffic flow. These improvements have been closely coordinated with MassDOT, and are proposed for the following locations:

1. Revere Beach Parkway and Washington Avenue, Chelsea
2. Revere Beach Parkway and Union Street, Chelsea
3. Revere Beach Parkway at Garfield and Webster Avenues, Chelsea

DCR suggests that the Proponent make additional changes to reduce accidents at the Revere Beach Parkway at Garfield and Webster Avenues intersection. This intersection was noted in our FEIR comments. In the SFEIR, the Proponent concluded that left turns can be made simultaneously from Garfield Avenue and Webster Avenue with the existing intersection geometry and that split phasing is not necessary. DCR notes traffic congestion and documented accident history are associated with these simultaneous left turning movements, and a solution should be explored further when the Proponent submits its Construction and Access Permit. All other issues raised in our FEIR letter appear to be addressed by the Proponent in the SFEIR. 2

Thank you for this opportunity to comment. If you need further information on transportation impacts, please direct inquiries to Ken Kirwin at 617-626-1498 or ken.kirwin@state.ma.us.

Sincerely,

John P. Murray
Commissioner

cc: Laura Dietz, Ken Kirwin, Tom LaRosa, Mike Misslin, Joe Orfant, Nathaniel Tipton (DCR)
Jamie Fay, Fort Point Associates

MassDEP
Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Matthew A. Beaton
Secretary

Martin Suuberg
Commissioner

March 27, 2015

Matthew A. Beaton, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Everett
Wynn Everett
1 Horizon Way
EEA #15060

Attn: MEPA Unit

Dear Secretary Beaton:

The Department of Environmental Protection (MassDEP) has reviewed the Supplemental Final Environmental Impact Report (SFEIR) submitted by Wynn MA LLC, to construct a 3,096,700 square foot (sf) resort casino on 25.6 acres of a brownfield site and 8.3 acres of the Mystic River in Everett (EEA #15060). The Secretary's FEIR Certificate required the proponent to submit an SFEIR as there were outstanding issues. The Certificate noted that the SFEIR shall be limited to traffic and transportation issues and response to comments. In addition to addressing these topics, the SFEIR described design refinements and provided a Section 61 Finding.

As described in the SFEIR, the project will be comprised of a 386-foot high building with 621,774 sf of space with 629 hotel rooms, 52,632 sf of retail space, 54,680 sf for restaurants, 190,461 sf of gaming space (4,580 gaming positions, an increase of 420 electronic gaming machines since the FEIR), and 52,463 sf of space for a spa/gym and convention/meeting facilities. Parking for 3,400 vehicles is planned in a four-level, 1,627,751 sf garage below the casino building. The refined SFEIR plans include a reduction of 300 parking spaces in the garage. An additional 800 parking spaces are proposed offsite at an unspecified location. Most of the proposed project is located on filled tidelands.

The project would have 69,000 sf of open space including a harbor walk and boating dock facilities for water transportation. Various on-site and off-site public amenities and waterside improvements are proposed such as landscaping, outdoor seating, salt marsh construction,

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shoreline stabilization, removal of deteriorated timber and steel piles moorings, and off-site harborwalk connections to the Department of Conservation and Recreation's Gateway Park and an existing bike path/harborwalk. Dredging of about 15,000 cubic yards of contaminated sediments is proposed to reestablish the former navigation channel and accommodate a floating dock system for recreational vessels and water transportation services. The volume of sediments to be dredged for remediation of the contamination will be determined under the Massachusetts Contingency Plan/21E program.

Information in the SFEIR indicates that the project proponent also may acquire property from the Massachusetts Bay Transportation Authority (MBTA) and/or other entities, for the purpose of constructing a service road and shared entrance. The service road and shared entrance are intended to provide adequate access to both the Wynn Resort and the abutting MBTA Everett Shops maintenance facility. MassDEP provides the following comments.

Wastewater

The SFEIR indicates that the project will generate an estimated 283,489 gallons per day of new wastewater flows, based on flow estimates included in 310 CMR 15.203. In the Draft Section 61 Findings for MassDEP, the SFEIR reaffirms Wynn Everett's commitment to meet the four-to-one infiltration/inflow (I/I) removal requirements, though no specific I/I removal projects have been identified. MassDEP participated in a meeting with representatives of the Wynn Project, along with staff from the City of Everett and the MWRA in October 2014 to discuss the required I/I mitigation for this project. The City is currently in the process of implementing an I/I investigation program, which is expected to yield specific projects to rehabilitate existing infrastructure and remove I/I from the City's sewer system. The SFEIR asserts that Wynn MA LLC will provide funding which will be reserved by the City for specific I/I removal projects that will be identified in the City's I/I investigations. MassDEP will continue to monitor the progress of the I/I abatement program in Everett, and the funding commitments of the Wynn project to fulfill the requirements for 4:1 removal for this project. 1

Wetlands

The plans for recreating shellfish beds has been eliminated because it is reported that the Division of Marine Fisheries (DMF) would not be able to approve a shellfish restoration project in this prohibited area (GBH4.0), where the water quality is impaired with high levels of bacteria. The DMF offers alternative areas for shellfish enhancements that would allow the proponent to fulfill this mitigation commitment. MassDEP strongly encourages further consideration of opportunities to improve shellfish resources at more appropriate locations in consultation with DMF. 2

The project proponent has made a commitment in the SFEIR to consult with MassDEP in developing specifications for the living shoreline and bank restoration. MassDEP appreciates this commitment in response to MassDEP's FEIR comments (pages 4-15 and 4-16). MassDEP looks forward to meeting with the proponent to ensure that the salt marsh restoration plan is implemented successfully and the living shoreline retains essential functions, which will require an erosion and habitat protection strategy that takes into account climate change. The living shoreline has been described in the previous FEIR as 22,980 square feet of replicated wetlands 3

including 10,900 square feet of new salt marsh and 12,080 square feet of restored/relocated coastal bank.

Chapter 91 Waterways

The Waterways Regulation Program (WRP) has reviewed the above referenced SFEIR (EEA #15060), submitted by Wynn MA, LLC (Proponent) for the proposed Wynn Casino and Resort project located on a 33.9 acres of land (approximately 8.3 acres consist of flowed tidelands of the Mystic River, 10.63 acres of filled tidelands, and 14.97 acres of non-jurisdictional upland).

The refinements detailed in the SFEIR are in compliance with the Everett Central Waterfront Municipal Harbor Plan (MHP) approved by the Secretary of EEA on February 10, 2014. In particular, the proponent has performed an updated wind and shadow study to ensure that no new net shadow or new net impacts from wind will occur at the ground level within jurisdictional areas as a result of said refinements to the hotel tower. Accordingly, the proponent is not required to provide offsets for the height substitution permitted in the MHP. Although some of the ground floor space has been reconfigured and programming of the ground floor space has slightly changed, the entire ground floor of the nonwater-dependent building within jurisdiction meets or exceeds the areal requirements for Facilities of Public Accommodation (FPAs), and therefore complies with the MHP and Chapter 91 regulations.

Although the project complies with the Chapter 91 lot coverage standard, pursuant to 310 CMR 9.51(3)(d), the Secretary's FEIR Certificate states that even if the project does not need a lot coverage substitution from the MHP, the proponent has committed to providing an open space connection from the development site to the existing DCR parkland via a connection beneath the existing MBTA railroad bridge. Furthermore, the FEIR Certificate stated that this open space connection shall be reflected in all subsequent state permitting.

To address concerns with sea level rise and accessibility, the west wing floor elevation has been elevated from 12'4" to 18'4" NAVD88 so that it is consistent with the rest of the first floor building elevation.

Stormwater

According to the SFEIR, the remaining stormwater issues identified in the MassDEP comment would be addressed in permitting. In the absence of additional information in the SFEIR, the proponent is reminded that an erosion resistant design of the stormwater outfalls is required for the maximum stormwater discharge velocity, in accordance with the *Stormwater Management Handbooks,* Volume 3, Chapter 1, page 2. The Stormwater Management Standard 1 also is clear that new stormwater outfalls may not cause erosion of wetlands or waters of the Commonwealth. As previously mentioned in MassDEP's FEIR comments, the plans of the riprap energy dissipation and tidegate designs (Figure 7-3B) did not clarify whether wetland resources would be impacted. The rip-rap splash pads proposed may not be sited within most coastal wetland resources, except for land subject to coastal storm flowage or riverfront area, in accordance with the wetland regulations in 310 CMR 10.05(6)(k). 4

Greenhouse Gas

The reduction in stationary source emissions with mitigation was reported to be 5,744.7 tons per year (tpy) (30.2 percent) in the FEIR. However, the SFEIR (Table 5) reports a smaller reduction of 5,531.8 tpy (27.4 percent). The narrative on the GHG modeling has not identified the sources of this stationary source emissions increase. Although the reduction of stationary source emissions has increased, the transportation emissions reduction remains unchanged from the FEIR at 358.6 tpy (13 percent). This suggests that additional traffic mitigation may be offsetting the increase in traffic volume corresponding with the refinements to the project. Accordingly, avoiding an increase in stationary source emissions, and maintaining or reducing the emissions estimated in the FEIR appears to be a reasonable goal going forward with the project design. To that end, the proponent is encouraged to consider additional improvements in the energy efficient designs and expansion of the commitment to renewable energy. 5

The revised plans include 420 additional gaming positions (4,580 total). The *Summary of Energy Modeling Assumptions* (Table 6) indicates that the baseline was modeled without low-energy electronic gaming machines (EGMs), for comparison with the proposed project with low-energy machines. It is unknown whether all EGMs will be low energy (page 3-42), and this has not been clarified in the Section 61 Finding. On the other hand, the FEIR made a commitment for a minimum of 80 percent low-energy machines. The SFEIR also does not include an updated analysis of low-energy gaming machines to understand the GHG emissions from the additional machines. Therefore, it is unclear if there would be an increase in energy use of the additional EGMs. A footnote in Table 7 identifies a reduction in plug loads in the casino/gaming area between the Base Case at 3.44W/sf to 2.17 W/sf for the Mitigation Case, which is a clear improvement. However, there is no breakdown of the energy use by type of plug load to understand if the lower energy use is attributable to the EGMs. There also is no comparison of the change in plug load energy use between the Mitigation Case in the FEIR and the Mitigation Case in the SFEIR. This information would provide an understanding of the change in energy use due to the additional EGMs. To the extent that it is feasible, a net increase in EGM energy use for EGMs from that reported in the FEIR should be avoided. In addition, it is requested that the Section 61 Finding in the SFEIR address this issue directly. A revised Section 61 Finding should specify how many EGMs will be low-energy and the EGM total. It also would be useful to provide comparable information on EGM energy use, as was available in the Section 61 Finding for the cogeneration plant, such as clarification of the energy savings expected with the low-energy EGM to be used. 6

Additional details in the Section 61 Finding on the commitments to renewable energy also should be included, such as quantification of the 30 percent commitment, including a cogeneration plant (20 percent), rooftop solar (10 percent), and a Green Power purchase (seven percent). It is noted that the commitment to Green Power purchase was not in the Section 61 Finding (page 3-43). 7

Air Quality- Mobile Sources

These comments pertain to the proposed project's mobile source air quality impacts. MassDEP supports the proponent's commitment, including among others, a shuttle bus system to connect the MBTA Orange Line stations at Malden Center and Wellington to the site; a proposed "Premium Park and Ride" shuttle service from the Massport Logan Express parking lots located

in Braintree, Framingham, and Woburn to the project site; and the employment of a full-time transportation coordinator. The SFEIR included a detailed parking analysis as requested in MassDEP's comments on the previous FEIR. Based in part upon the parking program and several other supportive TDM measures, the SFEIR proposes a goal of no more than 41% of employees and 71% of patrons relying on single occupant vehicle travel to the project site. Tracking progress towards this the goal will help determine the efficacy of the proposed transportation demand management (TDM) program and/or whether additional measures are warranted.

The SFEIR subsection 2.7 provides an expanded Transportation Monitoring Program (TMP). MassDEP strongly supports the commitment in the TMP that additional TDM measures will be implemented if any of the three conditions pertaining to increased traffic volumes contained in Section 2.7.3 are exceeded. MassDEP supports the commitment to evaluate on-site parking pricing strategies. In addition, MassDEP encourages evaluation of parking pricing strategies *off-site* to encourage patrons to use low- or no-cost off-site parking instead of longer trips to the Project site. The TMP also includes the consideration of traffic signal coordination and light cycle retiming, if necessary. MassDEP encourages the proponent to rely more on travel demand measures rather than transportation system management solutions. Finally, the TMP includes additional bicycle parking as a possible element, but MassDEP notes that an impediment to bicycle commuter travel may be the lack of protected bicycle lanes on major routes serving the project site. Accordingly, MassDEP recommends a much greater emphasis by the proponent to improve the safety of bicycle access to the Project site and to off-site parking facilities. 8

Air Quality

MassDEP acknowledges that the project proponent has made a commitment to meet with MassDEP to discuss plans regarding the 1-megawatt (MW) micro-turbine cogeneration plant, any boiler units in the size range of 10-40 MMBtu/hr heat input, and any emergency engine generators 37 kilowatts (kW) or greater, as soon as more detailed designs are available and prior to permitting. MassDEP further notes that the SFEIR states that all boilers and emergency generators will be permitted through the self-certification provisions of DEP's ERP, 310 CMR 7.26.

MassDEP recommends that the Secretary require the proponent to meet with the MassDEP as soon as practicable to have a technical discussion about all potential emergency generators, boilers, fuel-burning equipment and the 1-MW micro-turbine cogeneration plant. MassDEP recommends on projects such as this one, a timely technical discussion of all air-emitting sources to prevent potential problems, including nuisance conditions. Even proposed equipment that may be eligible to be self-certified under the ERP program can benefit from such timely technical discussions (i.e., prior to the proponent entering into final designs, purchase orders or installation), including avoiding nuisance conditions. For instance, depending upon site constraints, and potential sensitive receptors, it may be advisable to place certain equipment, such as emergency generators, on the roof of a building, rather than at ground level. 9

Massachusetts Contingency Plan/M.G.L. c.21E

The FEIR and SFEIR identified specific remediation plans to address contamination at the main project site at 1 Horizon Way, which was previously assigned Release Tracking Number (RTN) 3-13341. However, the parcel(s) where the proposed service road and shared entrance are to be located were not mentioned in the FEIR or SFEIR remediation discussion. The service road and shared entrance properties appear to include portions of previously identified disposal sites. The project proponent is advised that the construction of the service road and shared entrance must comply with all applicable requirements of Massachusetts General Law, Chapter 21E (M.G.L., c.21E) and the Massachusetts Contingency Plan (MCP), 310 CMR 40.0000. Furthermore, in the event that the project proponent becomes an owner or operator of a disposal site or any portion of a disposal site, additional responsibilities under M.G.L. c.21E and the MCP may apply, depending on the regulatory status of the disposal site and the nature of the planned construction activities. 10

The MassDEP appreciates the opportunity to comment on this proposed project. Please contact Jerome.Grafe@state.ma.us at (617) 292-5708 for mobile source air quality impacts, Heidi.Davis@state.ma.us at (978) 694-3255 for additional wetlands information, Kevin.Brander@state.ma.us at (978) 694-3236 for further information on the wastewater issues, Ben.Lynch@state.ma.us at (617) 292-5615 or Frank.Taormina@state.ma.us , at (617) 292-5551 or for information on Chapter 91 waterways licensing, Andrew.Clark@state.ma.us at (978) 694-3213 for information on brownfields, Marc.Altobelli@state.ma.us, at (978) 694-3284 for issues relating to stationary source air quality issues, and John.Carrigan@state.ma.us at 978-694-3299 on solid waste disposal issues. If you have any general questions regarding these comments, please contact Nancy.Baker@state.ma.us, MEPA Review Coordinator at (978) 694-3338.

Sincerely,

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission
Ben Lynch, Jerome Grafe, Frank Taormina, MassDEP-Boston
Eric Worrall, Susan Ruch, Steve Johnson, Rachel Freed, Kevin Brander, Heidi Davis, Joanne Fagan, John Carrigan, Marc Altobelli, Andrew Clark, MassDEP-NERO
City of Everett, Conservation Commission
Marianne Connolly, MWRA
John Ballam, Paul Ormond, DOER
EkOngKar Singh Khalsa, Exec. Dir., Mystic River Watershed Association

Commonwealth of Massachusetts

Division of Marine Fisheries

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Paul J. Diodati
Director

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Governor
Karyn E. Polito
Lieutenant Governor
Matthew A. Beaton
Secretary
George N. Peterson, Jr.
Commissioner
Mary-Lee King
Deputy Commissioner

March 25, 2015

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office, Anne Canaday
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: EEA# 15060, Wynn Casino in the City of Everett.

Dear Secretary Beaton:

The Division of Marine Fisheries (*MarineFisheries*) has reviewed the Supplemental Final Environmental Impact Report (SFEIR) submitted by Wynn Everett to develop the former Monsanto Chemical Plant property on the Mystic River in Everett. In addition to extensive upland development, the shoreline will also be altered and in some areas restored with salt marsh and riparian plantings. The proposal includes a 1,230 ft long steel sheet pile bulkhead, stone revetments and construction of pile supported walkways and floats for docking transient vessels. The former channel will be dredged to a depth of 6 feet below MLW over an area of 45,800 ft², including 7,720 ft² of intertidal dredging.

Changes since the FEIR
Changes relevant to fisheries include removal of the soft shell clam and oyster restoration concept.

Marine fisheries resources at the project site
The proposed project would result in alteration of coastal bank, coastal beach, land containing shellfish, saltmarsh and land under the ocean. The coastal bank is characterized by degraded wharf structures, fill, and is lacking a native riparian community. The coastal beach currently supports pockets of salt marsh (*Spartina alterniflora*) that have persisted despite years of site degradation. Salt marsh provides a variety of ecosystem services, including habitat and energy sources for many fish and invertebrate species [1,2,3]. The coastal beach also supports a functioning intertidal mudflat with soft shell clams (*Mya arenaria*), which were surveyed on the site by *MarineFisheries* biologists in June 2013. Land containing shellfish is deemed significant to the interest of the Wetlands Protection Act (310 CMR 10.34) and the protection of marine fisheries. Several diadromous fish species utilize the Mystic River, including alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), white perch (*Morone americana*), American eel (*Anguilla rostrata*) and American shad (*Alosa sapidissima*) [4]. Winter Flounder (*Pseudopleuronectes americanus*) may be found in subtidal portions of the site.

Impacts and proposed restoration and mitigation
Mechanical dredging will be done using a closed environmental bucket to minimize sedimentation. We continue to recommend that all dredging occur outside of the fisheries time of year restriction from **February 15 to September 30** of any year for the protection of diadromous fish, winter flounder and shellfish critical life stages. The proposed 7,720 ft² of intertidal dredging will result in loss of habitat that may require mitigation, such as an in lieu fee, by State and Federal resource agencies. Construction of the bulkhead and walkway will result in 10,470 ft² of impact to coastal beach and tidal flat that may also necessitate mitigation. *MarineFisheries* would like to emphasize that the southwest corner of the project area includes important shoreline recreational fishing grounds. Development plans should maintain public fishing access to these existing areas.

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3

MarineFisheries is pleased that Wynn has demonstrated a desire to pro-actively improve water quality and habitat on the project site. Salt marsh plantings along the coastal beach may enhance fisheries habitat and improve shoreline stabilization. We recommend the use of coir rolls rather than a riprap sill seaward of the marsh plantings where possible to minimize erosion. The applicant has removed their proposed construction of an oyster reef and soft-shell clam re-seeding area as pro-active enhancement. There are several opportunities for habitat enhancement and water quality improvements in the Mystic River Watershed. *MarineFisheries* would be happy to continue to work with Wynn to identify a pro-active restoration project that would offer a beneficial contribution to the Mystic River watershed. 4

Questions regarding this review may be directed to Kate Ostrikis in our Gloucester office at (978) 282-0308 ext. 157.

Sincerely,

Paul J Diodati

Paul J. Diodati
Director

cc: Judith Kohn, Fort Point Associates
Robert Boeri, CZM
Ed Reiner, EPA
Ken Chin, DEP
Kathryn Ford, John Logan, Jeff Kennedy, Glenn Casey, DMF

PD/ko/sd

References

1. Boesch DF, Turner RE (1984) Dependence of fishery species on salt marshes: the role of food and refuge Estuaries 7: 460-468.
2. Deegan LA, Garritt RH (1997) Evidence for spatial variability in estuarine food webs. Marine Ecology Progress Series 147: 31-47.
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4. Evans NT, Ford KH, Chase BC, Sheppard J (2011) Recommended Time of Year Restrictions (TOYs) for Coastal Alteration Projects to Protect Marine Fisheries Resources in Massachusetts. Massachusetts Division of Marine Fisheries Technical Report, TR-47.

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

March 27, 2015

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-2150

RECEIVED
APR 02 2015
MEPA

RE: Everett – Wynn Everett Resort Casino – SFEIR
(EEA #15060)

ATTN: MEPA Unit
Anne Canaday

Dear Secretary Beaton:

On behalf of the Massachusetts Department of Transportation, I am submitting comments regarding the Wynn Everett Resort Casino project, as prepared by the Office of Transportation Planning.

As detailed in Section 3.b. of the attached comments, MassDOT acknowledges our error in executing a deed of sale for land associated with the Wynn Everett Casino while the project is still in the MEPA process. MassDOT and the MBTA acknowledge that this action constituted a "final agency action" during the MEPA process in violation of the MEPA regulations, and we regret that it occurred and are reviewing our internal processes to ensure that a similar action will not occur in the future. MassDOT and the MBTA are completely committed to adhering to the letter and spirit of MEPA.

In relation to the inappropriate final agency action that occurred in this instance, the Proponent has agreed to place the property in escrow until a Secretary's Certificate of Adequacy is issued on the Wynn Casino and sixty days has elapsed since the publication in the Environmental Monitor of the final MEPA filing on the project.

If you have any questions regarding these comments, please call J. Lionel Lucien, P.E., Manager of the Public/Private Development Unit at (857) 368-8862.

Sincerely,

David J. Mohler
Executive Director
Office of Transportation Planning

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
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cc: Thomas Tinlin, Acting Administrator, Highway Division
Frank DePaola, Acting Administrator, Rail &Transit
Christopher Willenborg, Administrator, Aeronautics
James Doolin, Chief Development Officer, Massport
Patricia Leavenworth, P.E., Chief Engineer, Highway Division
Neil Boudreau, State Traffic Engineer
Paul Stedman, Acting District 4 Highway Director
Walter Heller, P.E., District 6 Highway Director
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Planning Department, City of Boston
Planning Department, City of Medford
Kristin Slaton, Director, MassRIDES
PPDU Files
MPO Activities Files

Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Stephanie Pollack, MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

MEMORANDUM

TO: David Mohler, Executive Director
Office of Transportation Planning

FROM: J. Lionel Lucier, P.E., Manager, Public/Private Development Unit
Office of Transportation Planning

DATE: March 27, 2015

SUBJECT: Everett – Wynn Casino Resort: SFEIR (EEA#15060)

The Office of Transportation Planning has reviewed the Supplemental Final Environmental Impact Report (SFEIR) for the Wynn Casino Resort in Everett. The Wynn Casino Resort filed an Expanded Environmental Notification Form on May 31, 2013, a Draft Environmental Impact Report on December 16, 2013, and a Final Environmental Impact Report on June 30, 2014. The first two filings were found adequate; however, the FEIR was not, and the Secretary of Energy and Environmental Affairs issued a Certificate on August 15, 2014 specifying the scope for an SFEIR to address transportation-related concerns raised by MassDOT and a number of commenters.

MassDOT appreciates the collaborative approach of Wynn MA LLC (the Proponent) during the preparation of the SFEIR on various aspects of the project including highway and traffic operations, transit and bus operations, and travel demand management. MassDOT has met on numerous occasions with the Proponent team, and these meetings have been productive in clarifying a number of technical issues and refining several components of the project's mitigation program.

A. Project Description

The proposed project entails the development of a 2.6 million square-foot (sf) resort casino to be located on the west side of Route 99 (Broadway), opposite Mystic Street. The proposed development program has been modified since the submission of the FEIR, and the revised program includes:

- 190,461 sf of gaming space, to include 4,580 total gaming positions;
- a 629 room (621,774 sf) luxury hotel tower;
- 52,632 sf of retail space;
- 54,680 sf of food/beverage space;
- 37,068 sf of meeting facilities for business customers and large groups;
- a 15,405 sf spa and gym;
- a 5,322 sf four-season winter garden;
- approximately 411,058 sf of back-of-house and 58,548 sf of front-of-house support, restroom space and lobby lounge;
- waterfront features, a harbor walk, and water transportation docking facilities; and
- a 3,400 space parking garage (with five floors below-grade and six floors above-grade) and 800 off-site parking spaces with shuttle service for employees.

The project site comprises approximately 33.9 acres of land in the City of Everett, adjacent to the Mystic River. The project is bounded to the west by the tracks of the Massachusetts Bay Transportation

Authority (MBTA); to the north by the MBTA's Everett Shops Facility; to the east by Route 99, an existing carwash, and the Massachusetts Water Resource Authority (MWRA) and the Boston Water & Sewer Commission Treatment Plant; and to the south by the Mystic River.

Primary access to the site will be provided via a new signalized intersection on land recently acquired from the MBTA, a sale which we acknowledge constituted inappropriate "final agency action" of a project still undergoing MEPA review.[1] A secondary access for service deliveries and employees is provided via a service road that would follow the periphery of the MBTA Everett Shops property and connect with Route 99 across from Beacham Street in Everett.

B. Project Permitting

According to the SFEIR, the following transportation-related approvals/permits would be required:

1. Department of Conservation and Recreation (DCR) Access Permit

The Proponent has proposed improvements along the Route 16 corridor at Wellington, Santilli, Sweetser, and Bell Circles. These locations are primarily under the jurisdiction of DCR. However, MassDOT has been in discussions for a potential transfer of the segment of Route 16 from Interstate 93 to approximately Bell Circle. Pending completion of the transfer, DCR has agreed in principle that the design review for the proposed improvements at these locations will be primarily MassDOT's responsibility.

2. MassDOT Vehicular Access Permit

The project will require a Vehicular Access Permit from MassDOT to implement improvements for modifications to the I-93 Northbound off-ramp at Exit 28. The Proponent may also be required to acquire a permit to implement the proposed traffic signal improvements at Bell Circle.

3. Aeronautics

The project will require a Federal Aviation Administration (FAA) Air Navigation permit for the casino building and construction cranes.

4. MBTA Approval

The project will require MBTA approvals for implementation of site improvements at Sullivan Square Station, Wellington Station, and Malden Station.

C. Transportation Impact Assessment (TIA)

The SFEIR includes an updated transportation study that conforms to MassDOT's/EOEEA's *Transportation Impact Assessment Guidelines* (2014). The study includes a comprehensive assessment of the transportation system in the project area based on a thorough analysis of existing and future conditions. The SFEIR has reevaluated the transportation impacts of the proposed project based on revised trip generation estimates along with future transportation demands due to projected regional traffic growth, independent of the proposed development. The SFEIR includes an updated mitigation

[1] Please refer to Section 3.b. Facility Impacts to the MBTA Everett Shops for a detailed discussion of this issue.

program that is intended to offset most of the adverse impacts of the project in the Future Build condition. The mitigation program is multimodal and generally consists of highway, transit, bicycle, water transportation, and pedestrian improvements. The Proponent has also committed to a comprehensive transportation demand management (TDM) program to reduce automobile trip demand and further mitigate the impacts of the project. The SFEIR includes a Draft Section 61 Finding that describes and lists the costs of the different elements of the mitigation program.

While the SFEIR represents a vast improvement over the analysis and proposed mitigation presented in the FEIR, we nonetheless request, as discussed in greater detail below, that the Secretary require a Supplemental FEIR for the limited purpose of: developing a planning process for the integration of the City's long term plans for Sullivan Square and Rutherford Avenue and the impacts of casino-related traffic; documenting the reasons for, and taking public comment on, the decision by MassDOT/MBTA to transfer property to the Proponent; and, discussing the parameters for a commitment from the Proponent to provide an operating subsidy to the MBTA for the Orange Line.

1. Trip Generation

The trip generation calculations for the project have been revised to reflect the SFEIR development program. According to the Trip Generation Summary table, the project is expected to generate a total of 53,228 person trips on an average Friday and a total of 63,332 person trips on an average Saturday. Of the person trips on an average Friday, 16,178 are expected to be made via public and private mass transportation (including 979 person trips during the peak hour), 204 are expected to be made via walking or bicycling, and 36,846 are expected to be made via automobile. Due to assumed vehicle occupancy rates and credits for pass-by trips, the automobile **person** trips generate 20,130 net **vehicle** trips on an average Friday, including 1,358 net vehicle trips during the Friday PM peak hour. Of the person trips on an average Saturday, 19,158 are expected to be made via public and private mass transportation (including 1,404 trips during the peak hour), 244 are expected to be made via walking or bicycling, and 43,930 are expected to be made via automobile. Due to assumed vehicle occupancy rates and credits for pass-by trips, the automobile **person** trips generate 23,982 net **vehicle** trips on an average Saturday, including 1,810 net vehicle trips during the Saturday PM peak hour.

The Proponent has met with MassDOT to discuss and address previous comments regarding the methodology used to estimate person trips for the project. These comments and concerns are adequately addressed, and the SFEIR includes updated trip generation summary tables that show all assumptions, land uses, and changes in the development program.

The trip generation calculations reflect credits allowed for pass-by trips and mode share. Given the project's proximity to existing MBTA transit services, improvements to existing pedestrian and bicycle networks, provision of water transportation, a comprehensive TDM program, and the commitment to monitor the program, MassDOT concurs with the credits taken to calculate net trip generation.

2. Traffic Operations

The SFEIR presents an evaluation of traffic operations conducted for a number of intersections and roadway segments within the study area. The TIA includes updated capacity analyses and a summary of the 50th and 95th percentile vehicle queues for these intersections. In addition, the Proponent has adequately addressed discrepancies between the SYNCHRO traffic software and the VISSIM simulation model used to verify the mitigation plan performance measures. Working with the MassDOT Traffic Operations unit, information used to conduct both capacity analysis and traffic simulation were reviewed,

calibrated, and validated. MassDOT is confident that the analysis and the traffic simulation accurately portray existing and future operating conditions within the study area and support the effectiveness of the proposed improvements to mitigate the impacts of the Wynn Casino.

MassDOT has reviewed the impacts of the project on traffic operations, including proposed mitigation measures intended to address these potential impacts on state highway locations. The following comments are based on a more detailed review for each of the locations identified:

a. Route 99 Corridor

The Proponent has worked with MassDOT and the City of Everett to reevaluate the traffic mitigation along the Route 99 corridor (Broadway and Alford Street) to address previously identified unacceptable service levels, congestion, delays, and queues. These were more prevalent at the following intersections:

- Site Driveway/Mystic Street/Broadway (Route 99);
- Beacham Street/Broadway;
- Bowdoin Street/Broadway; and
- Dexter Street/Alford Street (Route 99).

The SFEIR includes a revised analysis, which generally indicates that traffic operations along the corridor would operate at acceptable LOS and delay, and overall corridor travel time would be favorable to bus operations. The Proponent has also committed to provide the MBTA with a Priority Signal System for all the buses along this corridor and to equip all the signalized intersections accordingly. The improvements proposed along Route 99 also include accommodations for bicycles and pedestrians that would link the Wynn Casino site to existing pedestrian and bicycle networks. Additional improvements to these facilities such as bus shelters, pedestrian signals, and pedestrian crossings were further refined during discussions and meetings and are committed to by the Proponent and will be reflected in the Section 61 Finding.

b. Rutherford Avenue Corridor

During the preparation of the SFEIR, the Proponent met separately with MassDOT and the City of Boston to address mitigation for Rutherford Avenue. A sensitivity analysis was provided to MassDOT to address the potential diversion of casino-related traffic to I-93 and a capacity analysis was provided for each of the intersections along the corridor. The proposed interim mitigation for the Rutherford Avenue corridor consists primarily of traffic signal modifications at the Route 1 ramps, minor geometric improvements at Spice Street, and geometric improvements and traffic signal improvements at Maffa Way. Although the information provided indicates that the corridor is expected to operate at acceptable LOS and delay, and operations on I-93 would not be significantly impacted under existing conditions, a clear determination by the City of Boston as to their final plan for the corridor and a schedule for implementation could help to determine any additional mitigation for the corridor. 1

The City of Boston is currently proposing to reconstruct Rutherford Avenue from the North Washington Street Bridge to Sullivan Square with more consideration given to a complete streets design . The project is at the conceptual design stage after a comprehensive public participation process, and a preferred alternative was identified in 2012 to accommodate future traffic and the vision for the surrounding land use. The design would reduce the roadway from three to two lanes in each direction,

eliminate six bridges to create at-grade intersections, and provide improved pedestrian, bicycle, and public transit accommodations.

c. Sullivan Square and I-93 Northbound Off-Ramp/Cambridge Street Intersection

The City of Boston is also planning an improvement project to address long-standing safety and operational issues in the Sullivan Square area. These improvements would include removing the Rutherford Avenue underpass and reconstructing the rotary to support a more pedestrian-friendly street network that would connect with the MBTA's Sullivan Square Station. As a result of the planning process, this project has advanced to the level of conceptual design identifying a number of connecting street blocks with multimodal accommodations. In the FEIR, the Proponent identified a series of interim measures to address casino-related traffic impacts, pending the implementation of long-term improvements by the City of Boston. MassDOT, in its comments on the FEIR, identified a number of concerns regarding the proposed mitigation, the analysis provided, the conceptual geometric plans, and the potential for operations at the I-93 northbound ramp at Cambridge Street to be compromised as a result of the proposed improvements. Additionally, the MBTA was also concerned about the impacts to Sullivan Square Station in terms of both pedestrian and vehicular access.

The SFEIR includes revised conceptual plans and updated capacity analyses for the proposed interim improvements. The plans have significantly progressed in addressing identified concerns regarding geometric design, safety, and traffic operations of the proposed Sullivan Square interim improvements. In particular, a proposed triple right-turn at the Cambridge Street eastbound approach to Maffa Way has been eliminated and replaced with a more conventional two-lane approach. The new design is supplemented with pavement markings, signage, and traffic signalization to address safety concerns and improve operations. Additionally, the Proponent has committed to reconstruct Spice Street and D Street to re-route traffic from Cambridge Street and Maffa Way destined for Rutherford Avenue southbound to relieve congestion at the Maffa Way/Cambridge Street /Alford Street/rotary. The construction of Beacham Street Extension to improve bus operations and circulation at the MBTA Sullivan Square Station will also provide similar benefits by removing traffic along the Rotary. All proposed improvements along Cambridge Street, Alford Street, and at Sullivan Square include pedestrian and bicycle accommodations that are linked to proposed or existing pedestrian and bicycle networks that would connect to the Wynn Casino Resort.

Additional improvements to be implemented by the Proponent include the reconstruction of the lower busway and the parking field to create a new circulation pattern for the bus station, and modifications to both pedestrian and MBTA bus circulation within the station. These improvements would connect to the street network with a new signalized busway exit opposite the I-93 northbound off-ramp on Cambridge Street for right-turning buses, and a new signalized entrance at Maffa Way allowing buses to circulate into the station from Beacham Street Extension and Main Street. The SFEIR also includes an evaluation of the feasibility of providing two-way access between Sullivan Square Station and the Charlestown Bus Garage by extending Beacham Street and signalizing its intersections with Main Street and Maffa Way. Based on consultation with MassDOT and the MBTA, it was agreed to not pursue this connection due to right-of-way impacts and limited transportation benefits.

With the proposed mitigation in place, the SFEIR analysis demonstrates that traffic operations would operate with acceptable LOS and delay. but there are still questions on whether queuing could be accommodated due to the proximity of the intersections within the area and the limited availability of vehicle storage. The Proponent has also provided separate performance evaluations for MBTA buses 2

serving the station to support their assertion that the proposed mitigation would not result in adverse impacts to existing operations.

According to the Proponent, the City of Boston provided inputs and requested revisions that were included in the final mitigation plan. However, the City has yet to make a determination as to the compatibility of these improvements with their long-term plan for Sullivan Square. The City's long-term vision for Sullivan Square is for a low traffic, pedestrian friendly, village-type neighborhood with improved access to the MBTA station, and bicycle and pedestrian connectivity with the rest of Charlestown. MassDOT remains concerned that the City's vision and the Proponent's plans are not appropriately aligned. Therefore, the Proponent should continue to work with MassDOT and the City to assess additional access alternatives to try to minimize traffic impacts to Sullivan Square while providing a connection to Route 99 for casino-related traffic. 3

As part of the terms of Wynn's gaming license, the Massachusetts Gaming Commission has established the Sullivan Square Infrastructure Fund (SSIF) to fund the Sullivan Square Infrastructure Project, which is defined by the Commission as "the design, construction and maintenance of all improvements to Sullivan Square and adjacent roads leading into and/or connected to Sullivan Square included in any plan that is approved and permitted by the City of Boston and the Massachusetts Department of Transportation, as the long term solution to alleviate traffic congestion in Sullivan Square and the roads leading into and/or connected to Sullivan Square." The SSIF is funded from the following contributions from the Proponent: $25 million made in ten annual installments of $2.5 million and a sum not to exceed $20 million over the same ten-year period that will be annually calculated based upon the amount by which actual casino-related traffic using Sullivan Square during the Friday afternoon peak hour exceeds the estimated traffic used by the City of Boston in the issuance of any required permits necessary for the Sullivan Square mitigation plan ($20,000 per additional vehicle trip). Under the terms of the Casino License, if the City of Boston does not commence the construction of the Sullivan Square Infrastructure Project within 10 years after the casino's opening date, the Proponent may petition the Commission for a return of any unused funds.

The Secretary's Certificate requiring the SFEIR, strongly encouraged the Proponent to consult jointly with MassDOT and the City of Boston regarding the project's impacts on Rutherford Avenue and Sullivan Square, the interim mitigation plans for the corridor, and long term plans for the area. While the Proponent consulted with MassDOT and the City individually on these issues, no joint meeting occurred. 4
We would, therefore, request that the Secretary require the preparation of a Supplemental SFEIR for the purpose of allowing the City, the Proponent, the Gaming Commission and MassDOT to establish a process for the development of the long term improvements for the Rutherford Avenue corridor consistent with the schedule outlined in the Gaming License.

d. Santilli Circle

Santilli Circle is part of Revere Beach Parkway (Route 16) and provides access to residential and commercial development on both sides of the rotary via Santilli Highway, Frontage Road, and Mystic View Road. The additional traffic associated with the Wynn Casino is expected to have impacts at these locations.

During the environmental review process, the Proponent met with MassDOT to further discuss the preferred alternative identified in the FEIR. This alternative consisted of modifying the signalized rotary to construct a flyover ramp from Route 16 eastbound to the Route 16 Frontage Road. It also included an enhanced, accessible pedestrian path along the western and northern sides of the rotary and

across Mystic View Road and Santilli Highway. Following discussions between MassDOT and the Proponent, a new at-grade intersection alternative that eliminates the flyover ramp has taken shape. This alternative is more consistent with MassDOT's preference for at-grade solutions that reduce long term maintenance costs and eliminate the visual impacts of an elevated structure. It consists of a combination of at-grade geometric improvements, traffic signalization, lane configuration modifications, and pavement markings and raised islands to reduce weaving at rotary entrances; new guide signage; and signal timing and phasing adjustments to address safety concerns and enhance operations of the rotary.

The capacity analysis included in the SFEIR indicates that most of the intersections and weaving movements are expected to operate with acceptable LOS and delay. Full accommodations are provided for bicyclists and pedestrians as part of these improvements. The Proponent should work with MassDOT to refine the design, improve lane utilization, and optimize guide signage location to ensure that casino patrons, a number of which will be unfamiliar with the area, will be able to safely and efficiently maneuver through the rotary. 5

e. Sweetser Circle

The Proponent has committed to provide improvements to Sweetser Circle to improve lane utilization and guide motorists through the rotary more efficiently. The FEIR design was refined and discrepancies in the performance measures were addressed after consultation with MassDOT. The results of the analysis indicate that the rotary is expected to operate at acceptable LOS and delay upon implementation of the geometric and traffic improvements. One of the specific areas of concern identified by MassDOT in our FEIR comment letter pertained to the queues on the off-ramp from Route 16 westbound to Sweetser Circle. According to the capacity analysis and the associated traffic simulation results, these queues are expected to be within an acceptable range for all peak periods.

MassDOT also identified as part of its FEIR comments the discontinuity of bicycle accommodations at Sweetser Circle and requested that the SFEIR present a mitigation plan that fully addresses how bicyclists going to the Wynn Casino or traveling along Route 99 would safely navigate the rotary. The Proponent has consulted with MassDOT to develop revised improvements specifically targeting bicyclists. The identified improvements allow bicyclists to travel through Sweetser Circle more safely; however, they do not provide ideal bicycle accommodations due to right-of-way limitations. Part of the proposed mitigation involves bicyclists dismounting their bicycles as they approach Sweetser Circle, walking their bicycles on the sidewalk, until ramping down to the bicycle lane on Route 99. MassDOT will continue to work with the Proponent during the permitting process to determine whether full accommodations could be provided.

f. Wellington Circle

As mitigation, the Proponent has committed to implement a combination of traffic signal upgrades and geometric improvements to address the project's traffic impacts. Specific geometric improvements would include the widening of the Route 16 approaches and the provision of an additional left-turn lane on the Route 28 northbound approach. The capacity analysis indicates that these improvements would generally bring LOS and delay to pre-existing conditions, although queues on some approaches would significantly worsen. MassDOT supports the implementation of these improvements as interim measures, given that this location is under consideration for a complete redesign to address existing operational deficiencies. The Proponent has committed in the SFEIR to contribute up to $1.5 million toward the study and the implementation of a long-term solution for this location.

g. Bell Circle

As previously identified, the Proponent has committed to traffic signal equipment, signs, and pavement marking upgrades to improve safety and meet current design standards. The SFEIR includes an updated evaluation of associated performance measures to gauge the effects of these improvements.

3. Public Transportation (MBTA)

The Proponent has worked cooperatively with the MBTA to address a number of concerns regarding impacts on MBTA operations at the Everett Shops, bus operations and circulation at Sullivan Square, Wellington, and Malden Center stations, and passenger loads on the Orange Line during the peak hour.

The SFEIR presents updated information on impacts relating to the use of shuttle buses to MBTA stations. The Proponent has conducted site visits at all impacted MBTA stations with appropriate staff to discuss what type of improvements could be made to the existing station layouts and bus berth locations to facilitate greater usage of transit to access the project.

The SFEIR provides updated information on how the Proponent's proposed shuttle schedule would align with the Orange Line schedule at Wellington Station, the capacity of the shuttle system to accommodate both patrons and employees, and the frequency of service to make it a viable alternative for employees and patrons. As part of this effort, the Proponent will redesign the existing parking lot at Wellington Station to provide new berthing spaces for the casino shuttle system, improve circulation of the existing parking lot, and relocate the layover spaces for MBTA buses. The Proponent should continue to coordinate with MassDOT and the MBTA during the approval process to implement these improvements. 6

The SFEIR includes transit analyses for the three existing bus routes that travel along Route 99 between Sullivan Square Station and the project site, with stops very close to the site. Routes 104, 105, and 110 operate near the site, with headways varying from 15 minutes to 70 minutes. According to the SFEIR analysis, the routes have sufficient capacity to accommodate additional employees and casino patrons should they elect to use Sullivan Square Station. However, as discussed above, the Proponent has committed to a shuttle service from Wellington Station that is intended to be a more attractive option to both employees and patrons.

a. Transit Demand and Impacts to the Transit Network

The SFEIR includes a revised analysis of projected Orange Line peak loads for weekday and weekend service days between Wellington and Back Bay stations. The projections indicate that loading standards would be violated during the Friday PM peak for the project. In our comment on the FEIR, MassDOT requested that the Proponent consider providing financial support for increased Orange Line service for any violation of the MBTA's existing service standards. In response, the Secretary's Certificate requiring the filing of the SFEIR specifically required the Proponent to consult with the MBTA and MassDOT about providing support for increased Orange Line service as part of the mitigation of the project's impacts. Although some discussions occurred during the preparation of the SFEIR, the Proponent has opted not to commit to providing an operating subsidy for the Orange Line. We therefore, request that the Proponent be required to file a Supplemental FEIR documenting casino-related Orange Line impacts, MassDOT's proposed methodology for assessing an operating subsidy as mitigation for those impacts, and the Proponent's response and reasons for its position. 7

The SFEIR includes detailed conceptual plans that indicate the possible locations for shuttle pick-up and drop-off at both Malden Center Station and Wellington Station. These plans were prepared with input from MBTA staff as part of site visits conducted during the preparation of the SFEIR. These plans are of conceptual nature, but are generally consistent with MBTA codes and standards related to the Americans with Disabilities Act (ADA), the Massachusetts Architectural Access Board (MAAB), and the Federal Transit Administration (FTA) regulations and guidance.

The SFEIR has adequately illustrated how pedestrian crossings and bus stops are coordinated to ensure safe and accessible travel for bus customers, specifically to and from the existing MBTA bus stops along Broadway and the casino. The operations of the traffic signals for the associated intersections have taken into consideration the locations of the bus stops and the pedestrian crossing movements and provided appropriate pedestrian signal timing and phasing as part of the overall intersection analysis. The resulting capacity analysis summary table indicates that the Broadway corridor will operate at acceptable LOS and delay, with MBTA buses experiencing improved corridor travel time.

b. Facility Impacts to the MBTA Everett Shops

In the FEIR, the Proponent proposed acquiring land from the MBTA Everett Shops to construct its primary site drive. In its comment letter on the FEIR, MassDOT noted the importance of the Everett Shops to MBTA operations and stated that no transfer of property would occur unless the MBTA was satisfied that the operations of the shop, which operates 24 hours a day, seven days a week, would not be negatively impacted.

On August 26, 2014, the Proponent submitted a formal offer to acquire property from the MBTA to provide primary access to the casino and to provide land for a service road. The offer was for approximately 2 acres with a purchase price of $6 million, including a deposit of $1.5 million. The offer specifically acknowledged that it was subject to public bidding under the terms of Chapter 161(5)(b) of the Massachusetts General Laws. On September 3, 2014, the MBTA issued a Request for Responses outlining the Proponent's Offer and soliciting competing bids. Under the terms of the original offer and the RFR any competing bid equal to or in excess of the Proponent's original offer would trigger a final round of bidding including the Proponent and the other bidder(s). In the event, no other bids were received and on January 29, 2015, the MBTA notified the Proponent of its acceptance of its original offer.

During the development of the SFEIR, the Proponent and the MBTA refined the plans for the access road and the service driveway to better accommodate the ongoing operations of the Everett Shops. With inputs from technical and operational staff, the Proponent was able to demonstrate that the modifications resulting from the land transfer would not be detrimental to site operations. The existing main gate will be relocated further north on Broadway and will be designed to accommodate the longest combination of towed disabled vehicles brought to the site. The entrance will also be set back so vehicles do not block through traffic on Broadway. Similarly, the service road will be designed to accommodate trailer trucks that deliver parts for the repair shop, and the MBTA will be granted the right to use the service drive during all hours of operation (24/7). Appropriate employee parking, site circulation, and emergency access were considered in the review of these plans.

This information should have been included in the SFEIR along with an acknowledgement of the MBTA's intention to transfer the land in question upon the conclusion of the MEPA process and the issuance of the Secretary's Certificate. Unfortunately, due to a breakdown in MassDOT/MBTA processes, on February 26, 2015, MassDOT/MBTA executed a quitclaim deed transferring 1.758 acres of

land to the Proponent for the previously agreed price of $6 million. That transaction has been completed and the deed has been recorded. MassDOT and the MBTA acknowledge that this action constituted a "final agency action" during the MEPA process in violation of the MEPA regulations, and we regret that it occurred.

MassDOT and the MBTA are completely committed to adhering to the letter and spirit of MEPA. MassDOT and the MBTA perform hundreds of real estate transactions each year. Very few of these transactions are for projects subject to MEPA review; the overwhelming majority are for smaller scale projects (utility easements, access agreements, etc.) that are not subject to MEPA review. The Secretary of MassDOT has directed staff to develop a more robust internal process to flag land transfers and real estate transactions that involve projects subject to MEPA and to ensure that the final agency action on those projects does not occur until after the proponent has completed all MEPA filings and the appropriate time lapse as described in the MEPA regulations has occurred.

MassDOT has discussed this issue with the Proponent and the Proponent has agreed to place the property in escrow until a Secretary's Certificate of Adequacy is issued on the Wynn Casino and sixty days has elapsed since the publication in the Environmental Monitor of the final MEPA filing on the project. MassDOT appreciates the Proponent's willingness to help cure this issue. MassDOT believes that the public should be given the right to understand and comment on the transaction and our decision to transfer the property in question. We, therefore, request that the EOEA require the preparation of a Supplemental SFEIR for the purpose of documenting the resolution of the issue raised in prior comments on the FEIR and the MBTA's decision to transfer the property to the Proponent, and taking public comment thereon. 8

4. Pedestrian Access

The SFEIR includes a comprehensive reevaluation of the project's pedestrian impacts within the study area, and has identified the routes that would experience a significant increase in pedestrian activity as a result of the project. To accommodate the increase and also encourage both casino patrons and employees to consider walking as an option, the Proponent has proposed new pedestrian facilities and/or upgraded existing facilities that tie to the on-site pedestrian connection. In the Sullivan Square area, the Proponent will construct new sidewalks along Beacham Street Extension and reconstruct/upgrade all the sidewalks where improvements are proposed within Sullivan Square.

In particular, the pedestrian route from Sullivan Square Station to the Wynn Casino will be upgraded in its entirety to improve the pedestrian experience for casino patrons and employees who elect to walk from the station to the site. In Everett, the Proponent will upgrade pedestrian facilities as part of the reconstruction of Route 99. These improvements will include associated pedestrian signals and crossings at all intersections along the corridor with particular attention provided to pedestrian movement at the project site drive. The bus stops along Route 99 will be located in consultation with the MBTA for direct connection to pedestrian facilities.

Additionally, the Proponent has committed to provide funding towards a study for a potential pedestrian connection between the new MBTA Assembly Row Station and the Wynn Casino. This alternative would significantly shorten the walking distance from the Orange Line and would be an attractive option to walk to the site.

5. Bicycle Access

Similar to the pedestrian improvements, the Proponent has committed to provide bicycle facilities at impacted highway locations. Bicycles lanes are proposed along the Route 99 corridor, and as part of the SFEIR they were upgraded to address concerns raised by MassDOT. The Proponent should continue to work with the City of Everett to seek an alternative to connect bicycle lanes to Route 99, north of Route 16. Further, the Proponent has noted that based on the latest discussions with the City of Everett, the Rail Trail project, which would improve bicycle connections along Route 99, is expected to be constructed in the near future. 9

6. Parking

The Proponent has updated their parking need based on the revised development program and a reanalysis of the parking capacity necessary to accommodate patrons on-site. The revised analysis includes more detailed information on the methodology and assumptions used to derive the parking demand for the project. The Proponent expects the proposed TDM program, the proximity of the site to alternative modes of transportation, and the provision of off-site parking for employees to significantly contribute to a reduction of on-site parking demand. Based on this reassessment, the project will eliminate 300 parking spaces from those proposed in the FEIR and now provide 3,400 parking spaces on-site to accommodate hotel guests, casino patrons, and visitors to the retail shops, and restaurants. The project would continue to provide 800 off-site parking spaces for employees. MassDOT is generally comfortable with the methodology, the assumptions, and the resulting parking demand.

The Proponent has indicated that a revenue control system will be installed in the underground parking garage and pricing strategies would be implemented to manage parking. This would help reduce single-occupancy vehicle trips and encourage the use of alternative transportation modes. The Proponent should commit to monitor the effectiveness of the pricing strategies and adjust prices as needed to meet the goals of site trip reduction and efficient site access and circulation. 10

7. Transportation Demand Management (TDM)

The SFEIR presents a more robust TDM plan that is generally responsive to MassDOT's comments on the FEIR. The TDM plan has committed to a wide range of multimodal measures aimed at reducing trip generation and promoting the use of existing and new pedestrian, bicycle, and transit facilities. These measures are generally classified as follows: transit measures, pedestrian improvements, water transportation, bicycle improvements, parking measures, and other measures. Some of the details of the TDM proposal related to pedestrian, bicycle, transit, and parking are described below.

- Facilitate better coordination with the MBTA to implement the TDM plan;
- Provide a more employee-centric TDM plan because employees will be the primary users of the transit access to the site;
- Schedule shifts to promote the most usage of transit by employees;
- With limited exceptions, prohibit employees from parking on-site;
- Provide specific details on incentives that would be offered to employees and casino patrons who use non single-occupant vehicle modes to access the site;
- Commit to work closely with MassRIDES in implementing the TDM program;
- Propose a template to track the effectiveness of the TDM program, including an appropriate plan and timeframe for traffic monitoring;
- Conduct a strategic marketing program to inform employees and patrons of the varied mode options available when accessing the site;

- Conduct regular reporting and evaluation of TDM measures after implementation to ensure their success and commit to making adjustments as necessary to elements of the plan that are not effective; and
- Hire a transportation coordinator to oversee the TDM implementation and to reinforce the Proponent's commitment to meeting and exceeding the non single-occupant automobile mode share projected.

Because the largest impact can be made by influencing the traveling habits of employees, the following are specific measures intended to discourage automobile travel to the site by employees:

- Dissemination of information on transportation options in back-of-the-house areas of the casino and on the employee intranet site and employee web portal;
- Creation of an internal incentive and rewards program to encourage walking, bicycling, and transit use. Prizes might include gift cards to area businesses and additional paid time off;
- Encourage employees to participate in the Nuride incentive program that rewards employees for taking greener trips;
- Management of parking at off-site employee parking lots to avoid employees parking in the local neighborhood;
- On-site Charlie Card sales;
- Providing one free month Charlie Card pass and a 30% subsidy of subsequent monthly passes for those using transit, the balance of which can be paid in pre-tax dollars;
- Providing bicycle commuter facilities such as secure bicycle parking and showers/changing facilities;
- Membership in a transportation management association to expand transportation options for employees;
- Providing a neighborhood shuttle for individuals who live in neighborhoods with high concentrations of employees; and
- Providing a guaranteed ride home program.

Given the vast differences in the commuting patterns of employees and patrons, the Proponent has developed TDM programs specific to each group. The following measures would be implemented to support the patron mode shares that are being projected:

- Installation of a Hubway bicycle sharing station;
- Patron mailings and local advertising would include information on reaching the site via transit;
- Providing proper employee training so that they can properly assist patrons in accessing the site and other area attractions via transit, walking, and bicycling;
- Incentives to customers who use the MBTA or water taxi service to reach the site;
- Resort website information prominently featuring information on accessing the site; and
- Water taxi and Charlie Card sales on site.

The revised TDM plan is generally acceptable to MassDOT and responds appropriately to specific comments made in our prior comment letters. The Proponent should continue to work with MassDOT and the parties identified to further refine the plan, as well as to monitor the program after implementation and to make changes as necessary.

8. <u>Transportation Monitoring Program</u>

The Proponent has set a goal of 29% of patrons to arrive to the site via non-automobile modes and 71% arriving via private automobile and taxi. For employees, the goal is for 59% to arrive via non-automobile modes and the remaining 41% arriving via automobile at designated satellite parking lots. As part of the project mitigation program, the Proponent has committed to implementing a transportation monitoring program to be initiated upon occupancy of the project. The goals of the transportation monitoring program will be to evaluate the assumptions made in the EIRs and the adequacy of the transportation mitigation measures, and to determine the effectiveness of the TDM program.

The monitoring program would provide the opportunity for the Proponent or others to implement appropriate improvements or adjustments that could entail roadway or geometric improvements, traffic signal timing and phasing modifications, optimization of the coordinated/interconnected signal system, parking pricing strategies, and/or further refinement of the TDM program to reduce site trip generation. Upon its inception, MassDOT will work closely with the Proponent to develop a more detailed data collection plan, employee and patron survey program, performance measures, and the content and the format of the monitoring report.

E. <u>Conclusion</u>

MassDOT acknowledges the cooperation and diligent work of the Proponent in the preparation of the SFEIR. The document is a vast improvement from the FEIR and adequately addresses most of the comments raised. However, MassDOT requests that the Secretary require the preparation of a limited Supplemental SFEIR for the purpose of: developing a planning process for the integration of the City's long term plans for Sullivan Square and Rutherford Avenue and the impacts of casino-related traffic; discussing the parameters for a commitment from the Proponent to provide an operating subsidy to the MBTA for the Orange Line; and, documenting the reasons for, and taking public comment on, the decision by MassDOT/MBTA to transfer property to the Proponent.

If you have any questions regarding these comments, please contact me at (857) 368-8862.

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March 26, 2015

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Anne Canaday, EEA No. 15060
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: Wynn MA LLC –Proposed Everett Casino

Dear Secretary Beaton:

On behalf of the Massachusetts Port Authority (Massport), we thank you for the opportunity to submit comments on the SFEIR submitted by Wynn MA, LLC for the proposed Wynn Everett casino and resort project on approximately 24 acres of a 33.9-acre site on Horizon Way off Lower Broadway(Route 99) in Everett, MA. The project site is currently undeveloped but formerly was the site of a Monsanto chemical manufacturing facility. As owners and operators of Boston Logan International Airport, Massport is interested in the project and its transportation elements, facility design and operational features.

We are pleased that the Wynn Everett team has continued to meet with Massport as its project planning has evolved, as detailed in this SFEIR. The largest changes in the casino are:

- The total number of gaming positions has increased from 4,160 to 4,580
- The hotel has been increased from 500 to approximately 625 rooms and the height has increased from 386 feet to 396.3 feet
- Retail, dining and nightclub space has been reduced from 121,513 square feet to 107,312 square feet
- On-site parking has been reduced by 300 spaces to 3,400

We note that several of the building envelope elements have changed since the FEIR; in particular, the proposed hotel is of a different shape, material and height. A detailed comment section on this subject is included.

Massport's principal interests remain focused on the continued safe and efficient operation of Logan International Airport with a high level of customer service. In particular, we look to see that the environmental process carefully focuses on local and regional traffic and transportation, building heights as they relate to Logan Airport arrival and departure patterns, and lighting and potential solar glare that could be associated with building exteriors or solar panel arrays and energy utilization.

Massport looks forward to the evolution of the Sullivan Square and Rutherford Avenue transportation program from conceptual to final. As the owner of "D Street" within this corridor and owner of the

former Pan Am freight rail corridor we welcome continued discussion on these intersections and how proposed Sullivan Square improvements can complement Massport's objectives for freight movement in Charlestown and the Boston region.

Our previous project comments have noted that a successful casino resort will add significant new jobs to the regional economy. We look forward to further discussions with the proponent on this matter, particularly to the extent those service jobs overlap with airport jobs..

Massport submitted detailed comments on the FEIR to MEPA on August 8, 2014. Attached to this letter is a summary of our previous comment, the proponent's response to our comment, and our rejoinder.

Building Heights, Solar Technologies and Glare, Lighting and Electro-magnetic Interference

We have reviewed the updated Aeronautical Impact Statement dated November 11, 2014 that was included in the Appendix E of the Supplemental FEIR. Based on the four coordinates of the high rise tower and the associated maximum elevations of 396.3 feet AMSL (two corners furthest from Logan Airport) and 353.8' AMSL (two corners closer to Logan Airport), we confirm that the current building heights as proposed appear to be consistent with Massport's Boston Logan Airport Composite Map of Critical Airspace Surfaces. The Proponent will need to file a 7460 with the Federal Aviation Administration (FAA) for both the building(s) and temporary construction crane(s). Note that the FAA review may also include solar glare, lighting and electro-magnetic interference. Massport will continue to be engaged in the technical review of this project through the FAA 7460 process. We also encourage the project team to review FAA's Technical Guidance for Evaluating Selected Solar Technologies on Airports (Nov. 2010) as they move to finalize building design. 1 2

Labor Market/Jobs Creation

The SFEIR, which is almost exclusively focused on transportation, lacks a detailed analysis that shows the markets from which anticipated employees will be drawn, wage rates, job titles, and effects on neighboring communities and major employers including Logan Airport. It would have been useful if the proponent, as we requested, had analyzed the current and projected supply and demand for labor in the communities surrounding the proposed development.

Consequently, we reiterate our suggestion that well in advance of opening the proponent undertake a comprehensive analysis of the impacts associated with the creation of the estimated 4,000 permanent new jobs and 4,000 construction jobs; this level of employment has the potential to affect the labor pool for Logan Airport. This could include a comprehensive analysis of jobs created, type of jobs, wages and skills in the context of overall jobs created as well as the impact on the Logan Airport labor pool. This can be accomplished through the development of a workforce supply and demand model that estimates the workforce needs, skills required, wages and capture basin for the casino workforce when fully developed. This will allow for an analysis of the workforce catchment area and the likelihood of attracting and finding an adequate pool within the targeted capture geography. Existing and estimated future unemployment rates should be analyzed to determine if there is an adequate and available labor pool. We recommend a job training program that addresses any issues identified in the analysis. 3 4

Thank you again for the opportunity to provide comments and input to the SFEIR review process. We look forward to continued coordination with the proponent.

Sincerely,

Massachusetts Port Authority

Betty Desrosiers
Director, Strategic and Business Planning

Massport – 1	**DEIR Comment: The daily traffic volumes presented in Table 4-2 were estimated based on applying a 'k factor' to the peak hour volumes of 6%. The typical 'k factor' to determine daily volumes based on peak hour volumes is between 8% and 10%. There is no discussion regarding the use of the atypical 'k factor'.** *Proponent Response: The k-factor used to project daily traffic volumes from the peak-hour traffic counts is reflective of the traffic characteristics of roadways within the study area. Speed data was determined in relation to posted speed limits given the nature of the urban street network and the saturated traffic volume conditions.* **Massport (MPA) FEIR Rejoinder**: According to the FHWA, k-factors can be estimated using the values from nearby roadways with similar characteristics. The proponent could have listed the roadways used as reference to back up their estimation. Specifically, k-factors are determined by using an ATR unit to measure the volumes for every hour of every day for one year. The k-factor is the 30th highest hourly volume in the year divided by the Annual Average Daily Traffic (AADT). Typically this can be estimated by completing an ATR count for 48 hours, and dividing the peak hour by the average ADT between the two days. Speeds are typically determined by using an ATR unit during the same period the ADT volumes are being collected. *Proponent Response: No response needed.* **Massport (MPA) SFEIR Rejoinder**: Additional peak hour traffic count data was obtained in December, 2014 to supplement the previous count data. In addition the proponent has committed to an extensive traffic monitoring program for critical roadways and intersections in accordance with Section 2.7, Page 2-143 of the SFEIS. Traffic data will be obtained specifically at Sullivan Square as identified on Page 2-145, prior to the Project opening, and for a period of 10 years after full occupancy. The monitoring program, which can be adjusted as needed, "will be designed to determine the number of vehicle trips entering and leaving the intersection that are attributable to the Project during the Friday afternoon peak hour." This traffic monitoring program will determine the need for additional mitigation if necessary, resulting from identification of estimated versus actual traffic generated by the Project.

Massport – 2	**DEIR Comment: MassDOT as part of the MEPA review process for other casino DEIRs, has typically required casino submissions to include peak hour traffic volumes from typical weekdays (Tuesday, Wednesday, or Thursday). The peak hour traffic volumes contained in the DEIR were only collected on Fridays and Saturdays.** *Proponent Response: The data collection protocol and time periods were developed in consultation with and approved by MassDOT to reflect peak design conditions for the project.* **Massport (MPA) FEIR Rejoinder:** While the data collection process was approved by MassDOT/MEPA the typical weekday data could be used to validate the Friday and Saturday data used for the analysis. *Proponent Response: No response needed.* **Massport (MPA) SFEIR Rejoinder:** The Proponent has collected and committed to the future data collection as part of the 10-year traffic monitoring program. Refer to response to Massport 3.
Massport – 3	**DEIR Comment: The proposed site is located much closer to downtown Boston (approximately 3 miles) than the Aqueduct Casino is to Manhattan (approximately 12 miles). Therefore it is likely that a higher percentage of the auto trips will be via taxis due to the lower taxi fares, which may have potential impact to the Logan Airport taxi supply.** *Proponent Response: Chapter 4.0 includes a revised and expanded assessment of taxi trips associated with the project.* **Massport (MPA) FEIR Rejoinder:** The study indicates that 8% of trips will arrive/depart via taxi. The proponent estimates that peak demand for casino taxis will be Saturday; the lowest demand for taxis at Logan is Saturday. Consequently, impact on Logan taxi operations is expected to be modest. The proponent plans to enter into an agreement with the City of Everett that will allow taxis arriving from surrounding communities to pick up patrons at the casino. This is expected to reduce or eliminate deadheading. (Taxi operations are also addressed in Comment 10). *Proponent Response: No response provided.* **Massport (MPA) SFEIR Rejoinder:** The SFEIR did not provide any specific response to this comment.

Massport – 4	**DEIR Comment: The project should consider Complete Street Design Criteria for the Rte. 99 (Broadway Street) improvements...The boulevard entrance plan may create conflict and safety issues with bicycle lanes due to the proposed free right hand turns that are proposed.** *Proponent Response: The planned roadway, intersection and traffic control improvements have been designed consistent with a Complete Streets design approach that provides adequate and safe accommodations for all roadway users, including pedestrians, bicyclists and transit riders.* **Massport (MPA) FEIR Rejoinder:** The proposed site plan follows a Complete Streets design approach, however the site plan (Figure 4-9 of the FEIR) requires bicycles to utilize existing crosswalks and sidewalks to access the site. The figure also shows that bicyclists attempting to enter/exit the site must cross three to four travel lanes to make a left turn. The use of a bike box at this intersection could be explored to assist bicyclists in making these maneuvers. *Proponent Response: No response provided.* **Massport (MPA) SFEIR Rejoinder:** The SFEIR did not provide any specific response to this comment. In addition the plan does not show a bicycle and/or pedestrian connection to Route 99 from the Harborwalk along the south side of the project entry drive. This walkway should be a minimum of 12 feet wide to accommodate both pedestrians and bicycles to provide a continuous bicycle/pedestrian connection.

Massport – 5	**SFEIR Comment:** In Section 2.2.7.1 Mitigation, the report states "In response to a request by the City of Boston, the improvements also include improvements to Spice Street and D Street to re-route traffic from Cambridge Street and Maffa Way that is ultimately destined for Rutherford Avenue southbound." No further discussion of D Street regarding its current use, typical section or operations was completed for the roadway. Massport owns the right-of-way along a section of D Street, which is currently proposed as part of the SFEIS, to be upgraded "by others". Use of this road would require an agreement with the Authority. Massport is concerned with the stated goal of re-routing arterial traffic onto a privately owned, unimproved, local access road, which services several businesses including Boston Sand & Gravel, Boston Public Schools, and a MassDOT maintenance facility. Typically these types of "cut-thru" movements onto local streets are discouraged due to their negative impact on abutting properties, particularly due to traffic operations, traffic safety concerns, and a desire to keep through traffic on the main arterial roadways that are designed to accommodate higher traffic demand. Furthermore, without knowing the final proposed redesign of Rutherford Avenue, nor knowing the full redevelopment plan for the area, it may be too soon to recommend how this right-of-way should be used for mitigation, as conditions may change. The typical section mitigation design of the road as proposed also raises a concern with the projected volumes, as presented in Figures 2-78 and 2-80, where over 400 new vehicles per hour are projected to be re-routed onto this local roadway. The proposed mitigation defined in Figure 2-91E depicts a 20-foot typical section for D Street, which is appropriate for the current low volume of traffic serviced along the road, but is insufficient for the volumes as proposed. It is recommended that a minimum travel lane width of eleven feet be provided and the overall design should meet Massport standards.

Massport – 6	**SFEIR Comment:** Expanding on Comment 5, please clarify the additional traffic volume for the Spice Street right turn exiting movement from the 2023 No Build condition (Figure 2-70) to the 2023 Build condition (Figure 2-75) when no Project related traffic is estimated to be utilizing this roadway. There is no discussion on this increase of over 300 percent (approximately 200 vph) where the Spice Street right turn changes from 64 vph to 261 vph. The operational analysis shows that this approach presently operates at an acceptable LOS of C with delays of approximately 15 seconds and 95% queuing of four (4) vehicles. The Build with mitigation alternative shows a drastic increase in delay to approximately 48 seconds at LOS D, and 95% queuing of roughly eleven (11) vehicles. How is this increase in delay offset by the mitigation improvements proposed in Sullivan Square?
Massport – 7	**SFEIR Comment:** Please update the Sullivan Square Peak Hour Traffic Volume Figures (Figures 2-68 through 2-80) where the entering volume of the circle does not balance with the Cambridge Street, Maffa Way and Alford Street contributing movements. For example Figure 2-80 entering circulating volume of 1297 vph beyond southbound Rutherford Avenue should be 2107 vph.

Massport – 2	**DEIR Comment: MassDOT as part of the MEPA review process for other casino DEIRs, has typically required casino submissions to include peak hour traffic volumes from typical weekdays (Tuesday, Wednesday, or Thursday). The peak hour traffic volumes contained in the DEIR were only collected on Fridays and Saturdays.** *Proponent Response: The data collection protocol and time periods were developed in consultation with and approved by MassDOT to reflect peak design conditions for the project.* **Massport (MPA) FEIR Rejoinder:** While the data collection process was approved by MassDOT/MEPA the typical weekday data could be used to validate the Friday and Saturday data used for the analysis. *Proponent Response: No response needed.* **Massport (MPA) SFEIR Rejoinder:** The Proponent has collected and committed to the future data collection as part of the 10-year traffic monitoring program. Refer to response to Massport 3.
Massport – 3	**DEIR Comment: The proposed site is located much closer to downtown Boston (approximately 3 miles) than the Aqueduct Casino is to Manhattan (approximately 12 miles). Therefore it is likely that a higher percentage of the auto trips will be via taxis due to the lower taxi fares, which may have potential impact to the Logan Airport taxi supply.** *Proponent Response: Chapter 4.0 includes a revised and expanded assessment of taxi trips associated with the project.* **Massport (MPA) FEIR Rejoinder:** The study indicates that 8% of trips will arrive/depart via taxi. The proponent estimates that peak demand for casino taxis will be Saturday; the lowest demand for taxis at Logan is Saturday. Consequently, impact on Logan taxi operations is expected to be modest. The proponent plans to enter into an agreement with the City of Everett that will allow taxis arriving from surrounding communities to pick up patrons at the casino. This is expected to reduce or eliminate deadheading. (Taxi operations are also addressed in Comment 10). *Proponent Response: No response provided.* **Massport (MPA) SFEIR Rejoinder:** The SFEIR did not provide any specific response to this comment.

Massport – 4	**DEIR Comment: The project should consider Complete Street Design Criteria for the Rte. 99 (Broadway Street) improvements...The boulevard entrance plan may create conflict and safety issues with bicycle lanes due to the proposed free right hand turns that are proposed.** *Proponent Response: The planned roadway, intersection and traffic control improvements have been designed consistent with a Complete Streets design approach that provides adequate and safe accommodations for all roadway users, including pedestrians, bicyclists and transit riders.* **Massport (MPA) FEIR Rejoinder:** The proposed site plan follows a Complete Streets design approach, however the site plan (Figure 4-9 of the FEIR) requires bicycles to utilize existing crosswalks and sidewalks to access the site. The figure also shows that bicyclists attempting to enter/exit the site must cross three to four travel lanes to make a left turn. The use of a bike box at this intersection could be explored to assist bicyclists in making these maneuvers. *Proponent Response: No response provided.* **Massport (MPA) SFEIR Rejoinder:** The SFEIR did not provide any specific response to this comment. In addition the plan does not show a bicycle and/or pedestrian connection to Route 99 from the Harborwalk along the south side of the project entry drive. This walkway should be a minimum of 12 feet wide to accommodate both pedestrians and bicycles to provide a continuous bicycle/pedestrian connection.

March 27, 2014
Wynn Everett Casino
FEIR - Stationary GHG Sources
DOER Comments
Paul Ormond

The DOER notes the adoption of PV, co-generation, and numerous energy efficiency measures will be included and commends the project on both the number and degree of mitigations included.

The project proponent was responsive to the DOERs request to revise the GHG evaluation to reflect 2010 ASHRAE 90.1. Several potential issues and potential inconsistencies were noted, however. These can likely be resolved as the project moves into more advanced design and self-certification. It is the intent of these comments to identify any issues that affect the accuracy or completeness of the methods used to evaluate emissions and energy consumption.

The reported results indicate that the project conforms to the DOER's guidelines, achieving the recommended reductions compared to the baseline. However, we noted the following, which could affect the reported results:

A. The proponent appears to be using R-30 roof insulation in both the baseline and the proposed models, for both the hotel and the podium. This contrasts with the R-25 noted in the Greenhouse Gas report. If R-30 is indeed being used in the model to demonstrate requisite EUI reduction, then it is recommended that R-30 be used on the project. 1

B. It appears that an approximately 70% efficient water heater was used (energy input ratio EIR = 1.37) in the baseline model for the hotel, which is less than required by Appendix G. This will likely result in overestimating the energy consumption of the base case and thus potentially overestimating the estimated EUI reduction. 2

C. Variable speed drives were used for some equipment in the model, yet variable speed drives are not fully committed to by the proponent. Similar to A above, if variable speed drives are used to demonstrate EUI reductions, then that improvement should become an articulated commitment. 3

D. Output results for the Podium indicate many unmet load hours (up to >1100) in numerous zones, indicating equipment is undersized. Undersized equipment can potentially lead to under-predicting energy consumption. Having more than 300 hours unmet does not conform to Appendix G; this issue requires resolution in self certification. 4

E. No windows are shown on two sides of the podium; total window area for the podium is approximately 19%. It's important that the model performed to support self-certification reflect eventually-designed window areas and placement. 5

City of Everett
Office of the Mayor

AC

Carlo DeMaria, Jr.
MAYOR

Everett City Hall
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RECEIVED
APR 2 2015

March 30, 2015

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge St., Suite 900
Boston, MA 02114

Re: EOEEA #15060

Dear Secretary Beaton:

It is my pleasure to provide additional comments and reiterate my strong support for the proposed Wynn Everett project (EOEEA #15060) as presented by Wynn MA, LLC as most recently outlined in the recently filed Supplemental Final Environmental Impact Report (SFEIR).

This historic project represents the largest and most transformative project in Everett history and with a close to $2 billion investment by Wynn, represents one of the most meaningful economic development projects in the Commonwealth's history. The project, located off of Horizon Way in the city of Everett includes the single phase construction of the Category 1 gaming facility as authorized by the Massachusetts Gaming Commission with over 3 million square feet of new development on a highly contaminated former industrial site located in a prime waterfront location. The ability to redevelop this site – especially to the quality proposed by Wynn – highlights the City's priority of creating a high-functioning waterfront for the region that will be accessible to all residents.

As noted in my previous comments throughout the MEPA process and before my testimony to the Massachusetts Gaming Commission, Everett was approached in November, 2012 by the Wynn, MA LLC development team with the prospect of developing the former Monsanto Chemical Company site located on Horizon Way. Following extensive research and public outreach in my community, I offered by whole-hearted support of this project – a sentiment that was shared by the residents of Everett as evidenced by statutorily required ballot question put to the voters in June, 2013. This ballot question – whether to support or oppose the development – passed by an overwhelming margin, garnering nearly 90% of voter's support.

Throughout my dealings with Wynn, I have been continually impressed by their willingness to address the City's concerns and incorporate positive solutions into nearly every aspect of the development. Wynn has consistently proven to be progressive, open, cooperative and balanced in their approach to this public/private partnership.

E-mail: MayorCarlo.DeMaria@ci.everett.ma.us

As part of our comments to this supplemental filing by Wynn MA, LLC, the City fully incorporates its prior comments and support for this project including but not limited to the following:

Economic Benefits:

- Not only will the Wynn MA, LLC project inject nearly $2 billion in private investment into the region, but the project will create an estimated 4000 construction jobs and 4000 permanent direct jobs, many of which are well-suited to the region's skilled and hard-working labor force. To capitalize on this investment, the City has also negotiated local preference hiring standards, minimum requirements for local vendor use, and has re-written the local zoning for the Lower Broadway neighborhood (approved in November 2013) surrounding the property to capitalize on urban-scale, high quality spin-off development.

Local Planning and Land Use:

- The Wynn MA, LLC project fully embraces the City's Lower Broadway District Master Plan, completed in 2012. This plan highlights many of the needed transportation improvements, land-use controls (zoning, Municipal Harbor Plan, etc), and long-range vision for the Lower Broadway neighborhood. In particular, the acknowledgement of a large-scale mixed-use redevelopment at the former Monsanto Chemical Company site is at the heart of the neighborhood's desired future. The partnership with Wynn MA, LLC has and will continue to progress many of the short and long-term initiatives of this plan.

Public Amenities & Open Space:

- From the earliest discussions with Wynn MA, LLC, the City insisted that the site's redevelopment include clear and unimpeded access to an active waterfront open space. This is outlined in both the City's Host Community Agreement (HCA) with Wynn, and is required in the Everett Central Waterfront Municipal Harbor Plan (MHP). As such, the City is confident that the Wynn MA, LLC development as outlined in the SFEIR will provide the desired public amenities and active open space experience available to all Everett residents that will be connected with existing open space amenities within the community.

Multi-Modal Access and Accommodations:

- Providing diverse transportation access to the site is a priority for Everett. The Wynn MA, LLC proposal embraces this priority, accommodating cyclists and pedestrians with a new harbor walk connected to existing public parks, roadway networks, and other regional infrastructure (such as the Bike to the Sea path). Public transportation access to the waterfront is also provided, and highlighted with a proposed ferry service system. The City and Wynn are also exploring a possible direct connection to the Bike to the Sea pathway, which would require coordination with the MBTA and MassDOT. Finally, the City and Wynn are continuing to study the potential for either a commuter rail flag-stop to the existing Newburyport/Beverly line that abuts the property and/or a continuation of the Silver Line BRT currently proposed to extend into Chelsea within a few miles of the Lower Broadway neighborhood.

Environmental:

- The project as proposed will remediate and actively re-use a former Monsanto Chemical Company site – a site that is highly contaminated and has been an eyesore on the region's waterfront for generations. Given the contamination issues with the site, the City is fortunate to have a comprehensive redevelopment project that will re-activate this vacant brownfield at virtually no cost to the City or the State. Further, the project will incorporate creative measures to promoting a cleaner future for the site and surrounding water ecosystem, including cleaning the site's waterfront areas from contaminated debris, and incorporating a living shoreline into the project.

Green/Sustainability:

- As required by the State gaming legislation, the proposed Wynn MA, LLC project will be constructed as one of (if not the) most sustainable gaming establishments in the country, striving for LEED Gold Certification or higher. The City applauds this requirement and is working with Wynn to ensure the project meets and exceeds these requirements. Further the project seeks to complete many sustainable initiatives, including constructing a photo-voltaic system and incorporating many "green" components into the construction of the project to curb energy and water dependence.

Additionally and as noted above, traffic and transportation continue to be the most critical aspects of the Wynn MA, LLC project. From the beginning of this project and continuing to the present, the City and Wynn have met regularly to review nearly every aspect of the traffic and transportation program to address general and local concerns. Throughout this process, the City is gratified by the time and attention paid to these concerns and remains as confident as ever that the mitigation program for this project as outlined in the SFEIR will improve conditions within the City and the larger region, fixing many of the chronic issues crippling the surrounding roadway network. The City as part of its continuing review of the proposed mitigation plan offers the following comments regarding the Wynn MA, LLC SFEIR:

Traffic:

The City fully supports the proposal to maintain Santilli Circle as an at-grade rotary/intersection provided that: 1

- To the greatest extent feasible, additional improvements are made to accommodate the desired pedestrian routes through and around the rotary, particularly those connecting the Santilli Connector to the Gateway Shopping Center.

- It provides improved circulation at the intersection of Santilli Highway and the rotary where volume created by existing development has created inadequate queueing distances and heavy flow volume in the rotary leading to unacceptable backups on Santilli Highway.

- The traffic analysis at Santilli Circle should include a Saturday peak to account for heavy traffic volumes entering and exiting the Gateway Center during these times.

- Proposed Santilli Circle improvements should be coordinated with any widening and re-alignment of Route 16 as part of the Woods Memorial Bridge reconstruction project.

- Analysis should be completed for the northern intersection of Bow Street and Broadway, which may be reconfigured to eliminate the merge condition and allow the extension of the bike lane to Sweetser Circle. 2

- To the greatest extent possible, the Santilli Connector road cross section should be limited to one 11-foot travel lane in each direction at all locations where projected traffic levels can be accommodated. 3

- Remaining shoulder space should be allocated to pedestrian and bicycle uses and/or other traffic calming measures such as protected bike lanes and/or cycle tracks and sidewalks. 4

- The traffic analysis of Sweetser Circle should take into account congestion and delays which occur on Main Street northbound during the afternoon peak which often creates queuing that extends into the circle. 5

Transit:

- Traffic signal equipment along lower Broadway should include and utilize technology to optimize transit operations along the corridor. 6

- Transit stops in the vicinity of the project site should include contextually sensitive enclosed shelters. 7

Bicycle and Pedestrian Accommodations:

- To the greatest extent possible, pedestrian crossing signals should run concurrently with the corresponding green traffic signals where it is safe to do so and include a leading pedestrian phase. Pedestrian signals should also include countdown timers. 8

- Pedestrian signals should activate automatically unless it is necessary to have an exclusive pedestrian phase at a location with minimal pedestrian traffic.

- In areas of Lower Broadway where roadway widening or the removal of parallel parking is proposed, bicycle lanes should include a minimum 1' (preferably 2') striped buffer from the adjacent through travel lanes. 9

- To the greatest extent possible, "bike boxes" should be included at all intersection legs where a striped bike lane is not provided, including for left turn movements. 10

- The City supports providing bicycle accommodations throughout the entirety of Sweetser Circle and encourages the proponents to continue the constructive and ongoing working relationship with MassDOT, the City and local bicycle advocacy groups such as Bike to The Sea, Mass Bike, Livable Streets and others to continue the development of improvements to Sweetser Circle. 11

- Traffic calming measures such as raised/textured crosswalks, curb neck downs, etc. should be employed throughout the proposed mitigation, and specifically along Rt. 99/Lower Broadway and on entrance and exit ramps to Sweetser Circle to improve pedestrian safety at crosswalks. 12

- More detail should be provided showing how the bicycle and pedestrian paths at Santilli Circle will connect with the improved pathways being constructed as part of the Woods Memorial Bridge reconstruction project. 13

- The City is currently exploring options to bring bike sharing stations (i.e. Hubway) to Everett and encourages the proponent coordinate with the City to support this initiative. At minimum, one Hubway station should be located at the proponent's site. 14

Thank you for the opportunity to comment on and provide strong support for the Wynn MA, LLC project as outlined in the SFEIR. This is an historic opportunity for the City of Everett to reconnect with its waterfront, improve its aging transportation network, provide jobs and economic opportunity to its working population, and advance a transformative economic development project for not only the City but for the region as a whole. Please do not hesitate to contact me if you have any questions regarding the comments noted above.

Sincerely,

Carlo DeMaria
Mayor

CITY OF MELROSE

ROBERT J. DOLAN
Mayor

OFFICE OF THE MAYOR

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Melrose, Massachusetts 02176
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March 24, 2015

Mr. Matthew Beaton
Executive Office of Energy & Environmental Review
Atnn: MEPA Reviewer EEA 15060
100 Cambridge Street, Suite 900
Boston, Ma 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton,

The City of Melrose, like all Greater Boston communities, has seen a sharp increase in bicycling as a means of transportation, both recreationally and as a means of commuting to work. Any new growth approved in Melrose is designed with multi modal transportation in mind following smart growth principals embraced by the Commonwealth of Massachusetts.

I believe the development of the casino in Everett has the potential to improve bicycle connections throughout the Northern Strand Community Trail. I believe the benefits will be seen in several forms ranging from safety, to economic benefits, as well as environmental.

I respectfully request that the Commonwealth examine the current proposal being made by Wynn for the redesign of Sweetser Circle (rotary at the intersection of Route 16 and Route 99) to better accommodate cyclists. I would also ask your support to extend the Northern Strand Community Trail from its current southern terminus to the Mystic River. 1 2

Although outside of Melrose, an efficient multi-modal link from Melrose to the inner core of the Boston metro area is critical to our continued success as a city. Over the last several years, Melrose has gained much from the investments being made in neighboring communities ranging from the paved bike path through Malden and Everett, bike lanes on Route 99, and improved bicycle accommodations in Sullivan and Assembly Squares.

All of those investments, though outside Melrose, are providing direct positive benefits to Melrose residents and to Melrose businesses.

Thank you for your consideration

Sincerely,

Robert J. Dolan
Mayor

CITY OF SOMERVILLE, MASSACHUSETTS
JOSEPH A. CURTATONE
MAYOR

March 26, 2015

Via Email to anne.canaday@state,ma.us
And Hand Delivery

Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office, Anne Canaday
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: Supplemental Final Environmental Impact Report – Wynn Everett (EEA #15060)

Dear Secretary Beaton:

The City of Somerville has reviewed the Supplemental Final Environmental Impact Report (SFEIR) submitted by Wynn MA, LLC (Wynn). In addition to responding to issues raised in the certificate on the Final Environmental Impact Report (FEIR), the SFEIR reveals significant changes to Wynn's proposed casino resort project. These include a substantial increase in the number of hotel rooms from 504 rooms to 629, a 78,097-square foot increase in the size of the hotel tower, an 11% increase in the total gaming positions, and a decrease in the number of on-site parking spaces from 3,700 to 3,400.

By letter dated July 12, 2013, Somerville commented on the Environmental Notification Form (ENF). Somerville also commented on the Draft Environmental Impact Report (DEIR) and the FEIR by letters dated February 11, 2014, and August 8, 2014, respectively. Many, if not most, of the concerns raised in these letters have not been addressed in subsequent filings. The SFEIR is no exception. Somerville still has significant concerns with the project that have not been addressed through the MEPA process.

Among other things, the SFEIR underestimates project-related traffic volumes, underestimates the negative impacts on several of Somerville's streets and intersections resulting from the distribution of traffic on regional roadways, and proposes insufficient mitigation for traffic effects in Somerville. In addition, the traffic through Somerville will contribute materially to air quality degradation in a community that is more than fifty percent low income, minority, and/or English isolated. This community is intended to be protected by the 2002 Environmental Justice Policy, but the requirements of that policy appear not to have been met. Further, numerous

questions remain about Chapter 91 waterways matters and about the techniques proposed to remediate hazardous materials on site so that there will be no long-term threat to public health or the environment. Finally, the proposed Section 61 Findings are incomplete and fall short of the standard required to support appropriate agency actions, and Wynn's responses to the prior comments submitted by Somerville and others are cursory, at best.

These matters go to the purpose of MEPA review, underlie the granting of a casino license to Wynn, and greatly affect the mitigation commitments that Wynn would be required to meet if that license were to remain in place. Accordingly, we ask that you require a second SFEIR so that the citizens of Somerville and of other affected communities can understand the full impact of this project, and so that state agencies can be well-informed before acting upon any permit applications for the project.

Transportation

The project's traffic impacts pose extreme challenges to the current use and future plans for roadways in and around Somerville, including Washington Street, Mystic Avenue, Broadway, and McGrath Highway, as well as Rutherford Avenue, in neighboring Charlestown, all of which are directly impacted by traveling to, from and through Sullivan Square. In terms of the traffic analysis, Somerville has serious reservations relative to trip generation, traffic in Somerville, intersections inappropriately dropped, and additional mitigation requirements. The traffic impacts and their implications on roadway use and construction conflict directly with Somerville's attempts to address public health concerns associated with the heavy use of highways adjacent to residential uses (especially in environmental justice communities), and to foster a walkable and bike-friendly environment that provides a fertile ground for locally-grown businesses, and improve highway aesthetics. We also are concerned that no serious assessment is provided of the effects of the project on Assembly Square generally and Assembly Square Station specifically. 1 2

The trip generation rate used in the SFEIR is far too low. The Wynn Everett analysis used 0.29 trips per gaming position for the Friday peak hour and 0.33 for the Saturday peak hour. The study purports to be based on three examples, but drops the one example with the highest generation rate (Sugarhouse Casino). Even with this paltry sample, adding Sugarhouse to the mix would raise trip generation rates by 16 percent for Friday and 21 percent for Saturday. Other casino project proposals in Massachusetts (Millbury and Springfield) and elsewhere have used much higher rates. The rates used in Millbury were 0.50 trips per gaming position for the Friday peak hour and 0.58 trips per gaming position for the Saturday peak hour. These are about 72 percent higher than the Everett rates for the Friday peak hour and about 76 percent higher for the Saturday peak hour. Springfield uses a single rate of 0.46 peak hour trips per gaming position. Even this reduced level is 59 percent higher than the Friday rate used in Everett and 39 percent higher than the Saturday rate. It appears that the Wynn project has understated its trip 3

generation rate by at least 16 percent and perhaps as much as 76 percent. This calls into question all of the traffic analyses done for the project and, alone, should require a Second SFEIR.

The need for additional analyses is particularly relevant to Somerville—all of the intersections in Somerville assessed in the DEIR were eliminated from further consideration. As some of these intersections were above or near the 100 vehicle per hour threshold, that should have led to further analysis. For example, Intersection 50 – Mystic Avenue/I-93 Northbound On Ramp sees 105 to 125 project-related peak hour vehicles. The effect of these trips is not discussed in the SFEIR. And these effects and the effects at other Somerville intersections will be exacerbated if an appropriate and higher trip generation is used. 4

The increase in traffic caused by using more realistic trip generation rates also will lead to more and different mitigation requirements in Somerville and throughout the area. There is no way that Somerville can assess the requirement for mitigation on its streets and at its intersections without an accurate assessment of the increase in traffic. Somerville re-iterates its concern that the proponent has not been required to conduct a sufficient traffic analysis of intersections previously identified in Somerville. Although Wynn has now been required to use VISSIM software to represent traffic volumes and queues in Sullivan Square, the proponent has not undertaken this type of evaluation as to those Somerville intersections. The result is in an incomplete picture of what the Wynn Everett Project means for transportation capacity in and around Somerville roadways in the immediate vicinity of the project site and Sullivan Square. In addition, some of the mitigation already proposed, such as that at Santilli Circle, is of such a scale and duration that it would ordinarily require a 20-year design horizon rather than the much shorter design horizon used in the SFEIR. Given the large volume of traffic drawn to the Wynn Everett project, such a design horizon should be considered in a Second SFEIR. 5 6

Air Quality

The additional project-related traffic will impair air quality in Somerville and in the region. Even with its much-curtailed study area, the Mesoscale Air Quality Analysis attached to the SFEIR shows that project-related traffic alone will produce nearly 2,400 tons per year of carbon monoxide (CO_2), 3.2 tons per year of volatile organic compounds (VOCs), and 1.25 tons per year of nitrogen oxides (NOx). With a higher trip generation rate, an updated trip distribution, and a larger study area, these could increase by an order of magnitude. Both VOC and NOx are ozone precursors. Since the Commonwealth has just reached attainment under the National Ambient Air Quality Standards (NAAQS) for ozone, the State Implementation Plan (SIP) for ozone may need to be revisited and revised. 7

In addition, the Mesoscale Analysis makes no mention of fine particulate matter smaller than 2.5 micrometers ($PM_{2.5}$) or of ultra-fine particulate matter ($PM_{0.1}$). These pollutants are a growing concern. Since the NAAQS for $PM_{2.5}$ was first introduced in 1997, both the 24-hour standard 8

and the annual standard have been reduced significantly. Most recently, in 2012 the EPA reduced the NAAQS for $PM_{2.5}$ to an annual average of 12.0 micrograms per cubic meter ($\mu g/m^3$) while retaining the 24-hour average of 35 $\mu g/m^3$.[1]

With respect to the 1997 and 2006 NAAQSs for $PM_{2.5}$, Massachusetts submitted certifications in 2008-2009 for EPA approval. The certifications claim that existing SIP measures are adequate. EPA has approved parts of these certifications, is still reviewing other parts, and has disapproved yet other parts. Some of the commitments made by Massachusetts in these certifications have not yet been honored.[2] EPA's 2012 NAAQS for $PM_{2.5}$ requires another SIP submittal by Massachusetts, the deadline for which has passed just recently. Moreover, the 2012 NAAQS for $PM_{2.5}$ requires "monitoring near heavily traveled roads in large urban areas" because "particulate pollution can be higher along these roads as a result of emissions from cars and heavy-duty diesel trucks and buses." EPA is in the process of classifying areas as non-attainment or unclassifiable/attainment for the 2012 NAAQS for $PM_{2.5}$.

A brief review of data from eastern Massachusetts long-term air quality monitoring sites shows that the daily values at several sites are in the range of 30 to 50 $\mu g/m^3$, may already exceed the 24-hour standard, and easily could yield an annual average above the 2012 annual average standard. This raises the possibility of a requirement for a new SIP for $PM_{2.5}$. Projects of the size and traffic generation of Wynn Everett could materially increase $PM_{2.5}$ and should be subjected to a rigorous analysis of negative effects and mitigation. Similarly, as discussed below, the effect of ultra-fine particulates have been overlooked and may have serious consequences, especially near I-93, which serves the vast majority of traffic bound for the casino. Also as discussed below, these consequences are of particular concern to environmental justice communities. 9

Environmental Justice

More than half of the land area containing over half the population of Somerville meets one or more of the Environmental Justice (EJ) population descriptors in the 2002 EJ Policy. In fact, 50.7 percent of the census block groups in Somerville meet the criteria, and these block groups contain 53.8 percent of the population. Many of these block groups are within a mile of the Wynn Everett site, as are similar EJ populations in Everett and other surrounding communities. At the least, the enhanced public participation under MEPA required by the EJ Policy should have been met in the circulation and review of the SFEIR. The EJ Policy indicates that:

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[1] In 1997, EPA adopted a NAAQS 24-hour standard of 65 $\mu g/m^3$. EPA lowered this standard to 35 $\mu g/m^3$ in 2006.

[2] For instance, Massachusetts said it would adopt a state air quality standard in 310 CMR 6.00 that is the same as the NAAQS for $PM_{2.5}$. It appears not to have done this.

> Enhanced public participation may include use of alternative media outlets such as community or ethnic newspapers, use of alternative information repositories, and translation of materials or interpretation services at public meetings where the relevant EJ Population uses a primary language other than English in the home.

The distribution list for the SFEIR shows that it was not noticed in alternative media outlets, that it was not placed in alternative information repositories, and that no announcements or 10

summaries were prepared in Spanish, Greek, Haitian Creole, Italian, Portuguese, or any other language used by Somerville's EJ communities. Since many of these EJ populations are found along I-93 and other major access routes to Wynn Everett, such outreach should be required.

Further, the EJ Policy requires enhanced analysis of potential impacts on EJ communities. Even though the project does not directly meet an air quality standard for an EIR, the air quality questions raised above indicate that enhanced analysis of impacts and mitigation under MEPA are appropriate, given the broad MEPA jurisdiction triggered by the casino license and numerous other permits and approvals required for the project and the requirements for environmental justice. Realizing the full importance of this concern, Somerville has undertaken such efforts on its own by partnering with Tufts University on the Community Assessment of Freeway Exposure and Health (CAFEH) Study to examine public health questions arising from exposure to ultra-fine particulates for the areas of the city along I-93 and for its EJ populations. This study already has revealed potential differential adverse health effects for those living within 1,500 feet of I-93, who may be at greater than normal risk for cardiovascular disease than those living further away. The project's air quality effects on public health in Somerville (and in Everett and other surrounding communities) should be examined in terms of both criteria pollutants and ultra-fine particulates. 11

Chapter 91 – Waterways

The project changes described in the SFEIR do nothing to address concerns previously voiced by Somerville and others with respect to public trust rights and other Chapter 91 matters. Among other things, Somerville has expressed its concern with the height of the building, which is far taller than ordinarily allowed under Chapter 91 and the waterways regulations and is out of keeping with other development efforts in the area, including Somerville's substantial efforts to redevelop Assembly Square. For its height, in particular, the project remains dependent on a Municipal Harbor Plan (MHP) that in Somerville's opinion does not meet the policy objectives

and legal requirements[3] for MHPs but rather was put together to excuse this particular project from Chapter 91's usually rigorous standards.

With respect to the public benefits determination required by Chapter 91 and the Secretary's regulations, the SFEIR does not meaningfully address the full purpose and effect of the project, the impact on abutters and the surrounding communities, and the impacts on the environment, public health and safety, and the general welfare. Many of these concerns – ranging from traffic impacts to air quality to environmental justice – are addressed elsewhere in this letter. But they are no less pertinent to the consideration of a public benefits determination under Chapter 91. Rather than provide a true benefits-detriments analysis, the SFEIR continues the pattern established by Wynn's prior filings, namely, touting the supposed benefits in a perfunctory and unrealistic manner. What Wynn has provided is a benefits-benefits proclamation rather than a meaningful benefits-detriments analysis that weighs the project's detriments. These detriments are real and cannot be disregarded. 12

A substantial portion of the proposed use of tidelands is as a driveway and garage that will draw thousands of vehicles directly into the waterfront. The SFEIR fails to acknowledge this facet of the project and the impacts it brings about. For that matter, it fails to correct some significant misstatements in the FEIR, such as, "The remaining portion of the hotel, gaming area, some entertainment space *and the parking garage* are not in [Chapter 91] jurisdiction." FEIR, 3-31 (emphasis added). 13

Improved public access is promoted as a benefit in the SFEIR, as are the Facilities of Public Accommodation (FPAs). Without question, the boardwalk and other amenities will improve public access to this portion of the waterfront, but that it not the only consideration. This access is directly connected to the casino operations. Like the FEIR, the SFEIR characterizes the casino, itself, as an FPA.[4] The fact that the FPAs and public access are all associated with a casino brings about a unique set of issues associated with gaming facilities. In this instance, the public access serves to attract people to the gaming facilities as much if not more so than it serves to attract people to the waterfront. The Expanded Gaming Act itself (M.G.L. c. 23K) acknowledges that gaming poses certain issues not associated with other uses of the waterfront. These issues need to be acknowledged and assessed as part of the discussion on Chapter 91 and public benefits. This is particularly true given that the project changes discussed in the SFEIR include a significant increase in total gaming positions. 14

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[3] The MHP is the subject of a pending civil action filed by the City of Somerville in Middlesex Superior Court, C.A. No. 2014-04839.

[4] It is not clear that the regulators intended to include casinos as FPAs, and, as we have previously noted, Wynn's filings have not made clear the extent to which its facilities will be truly open to the public as opposed to part of a controlled resort casino experience. 15

There are other aspects where the discussion of Chapter 91 matters remains lacking. For instance, Wynn's assertion of the amount of open space it will create is optimistic, to say the least, and appears to include areas such as the driveways that will bring all of the casino traffic to tidelands within Chapter 91 jurisdiction. (The FEIR states that only approximately 1.3 acres of the "open space" is "landscaped open space.") Moreover, details on the environmental cleanup remain vague. This cleanup, while a benefit, cannot be entirely credited to this project. It is required by law. On several occasions Wynn has suggested that the casino is the *only* waterfront development that can cover the costs of cleanup, but this cannot be true. There are hundreds of examples of waterfront cleanups done in connection with less problematic projects. Whether or not correct, Wynn has itself characterized the property as a Tier II contamination site, which is on the low end of the scoring spectrum. Sites in higher contamination tiers have been cleaned up and redeveloped beneficially without resort to a casino. Moreover, the lack of detail about the cleanup plans – which apparently will include some combination of Activity and Use Limitations (AULs) and in-situ stabilization/solidification (ISS) – makes it difficult, if not impossible, to evaluate the benefits of cleanup. It is possible that the cleanup plan will end up significantly limiting the public benefits and will pose long-term maintenance concerns, particularly when exposed to flooding, storm surges, and other natural phenomena. 16

In short, the SFEIR poses serious questions as to the project's status under Chapter 91, whether the project's public benefits outweigh its detriments, and whether these benefits are commensurate with the private benefit being realized by Wynn. 17

Environmental Remediation

As noted above, the remediation plan discussed in the SFEIR is notional, at best, and has not been reviewed and approved by the MassDEP. In fact, the deadlines for such submissions and reviews have been extended for waterside remediation to as late as December 31, 2017. It appears that landside remediation review will take the form of a series of Release Abatement Measures (RAMs) to be filed before April 30, 2015. The first of these, for removal of arsenic contaminated soils and for ISS of low-pH soil, was to be filed on February 27, 2015. As yet, it appears that no filing has been made. Somerville previously raised several questions about ISS and about the form and content of any proposed AUL for the remediated lands, none of which have been answered. Inclusion of the proposed RAM plans in a Second SFEIR would provide the opportunity for Somerville and others to comment on the proposed remediation techniques and long-term controls. 18

It goes without saying that Somerville is supportive of efforts to clean up the site: this cleanup should have been completed many years ago. However, the cleanup effort, in and of itself, is not grounds for approving a project that poses other impacts. Moreover, any potential issues that will arise from a final cleanup plan need to be considered as part of this MEPA review.

Section 61 Findings

Somerville has reviewed the proposed Section 61 Findings in the SFEIR and finds them lacking, especially in terms of the mitigation proposed to set off negative effects in Somerville. Specifically, as discussed above, Somerville believes that a more forthcoming assessment of transportation effects will reveal serious negative consequences to traffic operation at several locations in Somerville. Until these intersections are fairly assessed and appropriate mitigation is proposed, the draft Section 61 Finding for MassDOT is fatally flawed.

Similarly, the draft Section 61 Finding for MassDEP pays no attention to air pollutant health effects in Somerville and other nearby communities. Since these potential health effects have not even been analyzed, there is no way without a Second SFEIR to determine what mitigation might be required and to incorporate it into an acceptable Section 61 Finding. In addition, the draft MassDEP Finding does not memorialize commitments made for environmental remediation, nor can it, until the needed RAM plans and other pertinent submittals are filed and reviewed. 19 20

Finally, the draft Section 61 Finding for the Massachusetts Gaming Commission (MGC) does not include commitments to help Somerville and other nearby communities to deal with problem gambling and other adverse social effects associated with a major gaming facility, nor does it memorialize the commitments made in the various community agreements. It similarly does not address traffic impacts. Until these shortcomings are remedied, the Finding is incomplete. 21

Each of these draft Section 61 Findings will be changed by the new analyses that Somerville suggests. For this reason, all should be revised and presented in a Second SFEIR.

Response to Comments

Section 4 of the SFEIR devotes a scant two pages to responding to the comments raised by Somerville on the FEIR. These responses give short shrift to the serious concerns raised by Somerville. In essence, Somerville is told that all is well and there is nothing to worry about. As detailed above, we do not agree. There remain serious unanswered questions in virtually every section of the SFEIR and from many sections of the FEIR that were not updated for the SFEIR. The City incorporates herein by reference its previous comments submitted as part of the MEPA process regarding the proposed Wynn Everett project. A Second SFEIR will allow the proponent to respond more seriously to the comments of Somerville and other nearby communities.

Conclusion

Since the SFEIR provided only the most cursory of responses to the concerns expressed in our comment on the FEIR, and since closer analysis of the SFEIR reveals new areas of potential negative effect and raises new questions, we ask that Wynn be required to prepare a Second SFEIR dealing with unanswered questions around transportation, air quality, environmental justice (including public health), Chapter 91, and environmental remediation. Only in this way can a sound decision be made on the impacts associated with the project, and the measures required to address those impacts. The validity of the casino license itself, which by statute must take into account environmental benefits and detriments, will be called into question.

Thank you for the opportunity to comment on the Wynn Everett project. Please contact my office with any questions.

Sincerely,

Joseph A. Curtatone
Mayor

Cc: Michael Glavin, OSPCD
City of Somerville Board of Aldermen

City of Malden
MASSACHUSETTS

www.cityofmalden.org
Gary Christenson, Mayor

March 18, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900
Boston MA 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton:

The City of Malden has embraced the ideas of smart growth and multi modal transportation as the way forward for our community to develop sustainably into the future. A corner stone of this effort is the construction of Malden's three-mile segment of the Northern Strand Community Trail (NSCT). The NSCT is a pedestrian and bicycle greenway that runs through the commercial and residential heart of our city.

We have definitely seen an uptick in bicycling and walking in Malden since the trail's construction. The NSCT has helped open up new opportunities for people interested in bicycling starting from Malden to surrounding communities for both recreation and as a method of commuting to work. Our ultimate vision is the connection of the NSCT under Route 16 to the trails along the Mystic River and the proposed Mystic Crossing Bridge linking Malden to Boston by alternative transportation.

Currently, many of our residents who travel by bike to Boston for work, or for recreation along the Mystic River use Route 99 and cross Route 16 at Sweetser Circle on their way to lower Broadway passing near the Casino site in Everett. In the short term that is the most popular and direct way for local cyclists to head to Boston.

I urge you to look more closely at the proposed roadway design for Sweetser Circle and make sure it accommodates the level of current riders as well as anticipate the growing ridership from communities along the NSCT such as Malden, Everett, Revere, Saugus and Lynn. This will occur as the trail reaches full build out. The City of Malden alone has over 60,000 residents and if you include all of the other communities along the trail you quickly reach a significant number. 1

200 Pleasant Street, Room 625, Malden, MA 02148 | Phone: 781-397-7000 Ext. 2001 | info@cityofmalden.org

Reports indicate that when the bike path is complete as many as one thousand cyclists per hour may travel down the trail to Boston at rush hour. Designing Sweetser Circle to accommodate this ridership is not just a convenience it is a safety issue. Encouraging and improving alternatives to driving will also help reduce traffic congestion around the Casino and Sullivan Square with the added economic benefit of bringing hundreds of potential customers to the facilities new water front park and shopping area. 2

In conclusion, I respectfully request that the Commonwealth take a closer look at the design of Sweetser Circle to more fully accommodate cyclists. I also request that the plans to build the extension of the NSCT under Route 16 to the Mystic River water front be included in any planned mitigation to reduce traffic to and from the Casino development project. Thank you for your consideration. 3

Sincerely,

GARY CHRISTENSON
Mayor, City of Malden

The City of Revere Massachusetts

City Hall
281 Broadway
Revere, MA 02151
(781) 286-8110
(781) 286-8199 Fax

Daniel Rizzo
Mayor

Office of the Mayor

March 25, 2015

Matthew A Beaton
Secretary of Energy & Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Beaton:

Thank you for this opportunity to once again comment on the Wynn casino project.

As you know, the Massachusetts Environmental Policy Act (MEPA) is intended as an opportunity to identify, catalogue and mitigate environmental impacts from major projects, and to prohibit state agencies from taking final action prior to the completion of the MEPA review process. As applied to the Wynn casino project, certain state agencies have completely ignored the requirements and spirit of MEPA. The Gaming Commission sidestepped MEPA by issuing a gaming license conditioned on many items, including future compliance with MEPA and a complete re-design of the entire project. In addition, the MBTA completed the sale of portions of the Everett Shops maintenance facility to Wynn, despite MEPA requirements and despite concerns raised in MassDOT's own MEPA comment letter on the Wynn project (described further below).

Wynn, with the assistance of certain state agencies, has been allowed to proceed with aspects of the casino project as if the MEPA process is already complete, to the detriment of those impacted by this major project. Put another way, the process followed to date has placed the proverbial "thumb on the scale" for Wynn in dealing with state regulators – precisely the outcome MEPA was designed to avoid by requiring a formal finding by your office prior to any final agency action.

For your information and for the record, I enclose with this letter my previous submissions on the topic of the sale of a portion of the MBTA's Everett Shops maintenance facility to Wynn. I offer the following additional comments:

1. The MBTA's sale of the land to Wynn was unauthorized. While the lack of transparency at the MBTA makes it difficult to confirm with precision, it appears that the sale of the Everett Shops land to Wynn was never put to a vote of the MassDOT Board, which is the governing body of both MassDOT and the MBTA. It was the MBTA, of course, that owned the land. The City suspects that the MBTA believes it had delegated the authority 1

to convey land valued at less than $15,000,000 to the MassDOT Secretary and MBTA General Manager through the attached vote.

However, it is clear that the underlying statutory authority to make this delegation, as referenced in the vote, relates to the MassDOT's role as MassDOT's governing body, not the MBTA's. The delegation of power is therefore unlawful and the conveyance is void. Moreover, as described in my February 4, 2015 letter to MassDOT, Paragraph 6, Wynn initially offered "an eight figure proposal" for the Everett Shops land, suggesting that the discounted price later submitted by Wynn was an attempt to subvert MassDOT Board oversight.

2. The MBTA's sale of the land to Wynn violated MEPA. As I have previously indicated, MEPA (G.L. c. 30, § 61) provides, in part: "All agencies, departments, boards, commissions and authorities of the commonwealth shall review, evaluate, and determine the impact on the natural environment of all works, projects or activities conducted by them and shall use all practicable means and measures to minimize damage to the environment. Unless a clear contrary intent is manifested, all statutes shall be interpreted and administered so as to minimize and prevent damage to the environment. Any determination made by an agency of the commonwealth shall include a finding describing the environmental impact, if any, of the project and a finding that all feasible measures have been taken to avoid or minimize said impact."

   MEPA's regulations at 301 CMR 11.12(4)(a) provide, in part: "Unless otherwise required by other applicable statutes or regulations, an Agency may not take Agency Action on a Project that is subject to MEPA jurisdiction and meets or exceeds any review thresholds unless and until the Secretary has determined that an EIR is not required or the Secretary has determined that the single or final EIR is adequate and 60 Days have elapsed following the publication of the notice of the availability of the single or final EIR in the Environmental Monitor."

   The conveyance of the Everett Shops land to Wynn by the MBTA is an "Agency Action" under MEPA and should not have been completed prior to the period required under the law and the applicable regulation. It is void for that reason as well. 2

3. The MBTA Disposition Process Violated the Law. Even if it were not void for the two reasons cited above, the sale of the Everett Shops land to Wynn is void because it violated the MBTA's statutorily required disposition procedure, as described in my letters to MassDOT dated October 2, 2014 and October 29, 2014. 3

4. The MBTA Disposition Was Contrary to MassDOT's MEPA Position. On August 26, 2014, less than two weeks after MassDOT had written in its formal MEPA comment letter that "it is critical that this information be laid out explicitly and with sufficient detail in the SFEIR so that the MBTA can determine whether or not this proposal would adversely affect critical transit operations", MassDOT and Wynn executed a letter agreement under which the MBTA would sell land to Wynn, subject to the right of others to better Wynn's offer.

While the Wynn SFEIR contains sketches showing turning movements within the Everett Shops facility, there is no information of any sort on how the conveyance will or might impact the critical transit operations to which MassDOT had referred. More specifically, there is no analysis on how the following aspects of operations at the maintenance facility might be impacted: (i) internal circulation and operations based on the fundamental re-orientation of the site; (ii) access and egress to Broadway; (iii) use of narrowed lanes on Broadway; (iv) loss or relocation of storage and parking areas; (v) how the MBTA might be expected, over time, to alter its use of the Everett Shops facility to accommodate the adjacent uses; and (vi) how the dual use of the access road for MBTA and casino operations might impact MBTA operations, particularly during periods of heavy use. 4

More to the point, it is unexplained why the MBTA decided to finalize the conveyance to Wynn before receiving the formal, public review of the Wynn project's impact on the Everett Shops facility.

Based on the foregoing, I respectfully request that your office take all necessary steps to require that Wynn and certain state agencies comply with MEPA, including but not limited to, voiding the MBTA sale of the Everett Shops land to Wynn.

Please feel free to contact me directly to discuss this matter further should you have any questions.

Sincerely,

Mayor Daniel Rizzo

cc: (Letter only)
The Hon. Charlie Baker, Governor
The Hon. Thomas M. McGee
The Hon. William A. Straus
The Hon. Mayor Martin Walsh
The Hon. Mayor Joseph Curtatone
Attorney General Maura Healy
Inspector General Glenn Cunha
MassDOT Board of Directors
Dr. Beverly Scott, Ph.D.
Mr. Jeffrey Simon
Mr. Mark Boyle
MBTA Advisory Board
Massachusetts Realty Group

The City of Revere Massachusetts

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Daniel Rizzo
Mayor

Office of the Mayor

March 23, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St., Suite 900
Boston, MA 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton,

Bicycling in and around Revere is on the rise. The development of the Revere section of the Northern Strand Community Trail (NSCT) is an important project for the City of Revere. The trail, when complete, will become a major recreational and alternative transportation resource for our community. It will also support current riders and anticipated rider growth from communities along the NSCT such as Saugus, Lynn, Malden, and Everett.

The Northern Strand Community Trail will be a critical component of connecting Revere residents to communities along the North Shore, as well as bringing additional visitors to our beachside city. The local impact will ripple, by creating additional impetus for local investment in bicycle infrastructure to connect residents across all parts of our region to the trail.

I urge you to look at how the Everett Casino project can impact the development of the NSCT and its connections to the Mystic River and Boston. The segment of bike trail we are building in Revere is part of a larger growing regional network of trails. The goal is for our trail to connect to the Mystic River and then to Boston. People are already making this trip to commute to Boston and there is a large potential for tourism also. The development of the Casino in Everett has the potential to improve those connections or damage them. 1

As a Mass in Motion community, Revere is actively building new partnerships and projects to enhance local efforts to create the environmental changes that will make it easier for our residents to be more physically active. Encouraging and improving alternatives for transportation is key for Revere.

Yours respectfully,

Daniel Rizzo
Mayor

CITY OF BOSTON • MASSACHUSETTS

OFFICE OF GAMING ACCOUNTABILITY
City Hall, Room 620 Boston, MA 02201

March 27, 2015

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

RE: EOEEA #15060 Wynn Everett Resort SFEIR

Dear Secretary Beaton:

The City of Boston submits the following comments on Wynn's Supplemental Final Environmental Impact Report ("SFEIR"), dated February 17, 2015. The City is opposed to the SFEIR on transportation in its entirety. Wynn's plan is inconsistent with and antithetical to the City's planned use of its streets in Charlestown. It further fails to mitigate traffic issues in Sullivan Square.

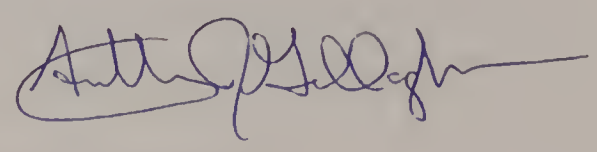
In its lawsuit against the Gaming Commission (*City of Boston v. Massachusetts Gaming Commission et. al.*, Civ. No. 15-0012 (Suffolk Sup. Ct.)), as well as in communications with Wynn, the City has made it abundantly clear that it has expended considerable time, effort, resources and funds in formulating plans to transition Sullivan Square into a low-traffic, pedestrian-friendly neighborhood. The plan described in Wynn's SFEIR, however, proposes a dramatic *increase* – rather than decrease – in traffic in Sullivan Square. Wynn's plan also would jeopardize the health, safety, and welfare of Boston's citizens. A multitude of other defects and flaws with Wynn's SFEIR render it inadequate, incomplete, and violative of MEPA requirements, as described in detail in the attachments to this letter. As a result, if necessary, the City will exercise its sovereign rights to prevent its streets from being used in a manner that is incompatible with its plans and the safety of its residents.

Attached please find the following City of Boston comment letters:

- Attachment A: Boston Transportation Department
- Attachment B: City of Boston Environment, Energy & Open Space
- Attachment C: Boston Parks and Recreation Commission
- Attachment D: Boston Redevelopment Authority

The City recommends and expects that you will issue a determination that Wynn's SFEIR on transportation is wholly inadequate.

Very truly yours



Anthony J. Gallagher
Office of Gaming Accountability
City Hall Room 620
Boston MA, 02201

Cc: Via Electronic Delivery:
Eugene L. O'Flaherty, Corporation Counsel, City of Boston
Gina Fiandaca, Boston Transportation Department
Brian Golden, Boston Redevelopment Authority
Austin Blackmon, Boston Energy & Open Space
Carrie Marsh, Boston Parks and Recreation Commission
Anne Canaday, Executive Office of Energy and Environmental Affairs
John Ziemba, Massachusetts Gaming Commission
Thomas C. Frongillo, Fish & Richardson, PC
Ariel I. Raphael, Fish & Richardson, PC
Caroline K. Simons, Fish & Richardson, PC

Attachment A

BOSTON
TRANSPORTATION
DEPARTMENT

ONE CITY HALL SQUARE • ROOM 721
BOSTON, MASSACHUSETTS 02201
617-635-4680 • FAX 617-635-4295

March 27, 2015

Via U.S. and Electronic Mail
Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900
Boston, MA 02214

Reference: EOEEA# 15060
Wynn Everett Resort
Transportation

Dear Secretary Beaton:

The City of Boston Transportation Department (BTD) submits the following comments on Wynn's Supplemental Final Environmental Impact Report (SFEIR) dated February 17, 2015 relative to transportation.

The City is opposed to the SFEIR on transportation in its entirety. Wynn's plan is inconsistent with and antithetical to the City's planned use of its streets in Charlestown. It further fails to mitigate traffic issues in Sullivan Square. The City has expended considerable time, effort, resources and funds in formulating plans to transition Sullivan Square into a low-traffic, pedestrian-friendly neighborhood. The plan described in Wynn's SFEIR, however, proposes a dramatic increase –rather than decrease – in traffic in Sullivan Square. Wynn's plan also would jeopardize the health, safety, and welfare of Boston's citizens. A multitude of other defects and flaws with Wynn's SFEIR render it inadequate, incomplete, and violative of MEPA requirements, as described in this letter and the attached letter dated March 27, 2015 from Richard S. Bryant of Stantec Consulting Services, Inc.

Quite frankly, we find that the SFEIR, much like the Final Environmental Impact Report, does little to address the substantial concerns we raised in comments on the Draft Environmental Impact Report (DEIR) filed for this project. Three primary concerns that were cited in our earlier comments and which continue today are listed here and described in greater detail below.

1. The City's plans for redevelopment of Sullivan Square have been ignored.

2. An effective and viable "interim" transportation mitigation plan for Sullivan Square has not been developed.

3. The viability and adequacy of traffic mitigation plans for Broadway and Alford Street in the site vicinity remain questionable.

The issues we have raised relate to the feasibility of the project and its mitigation measures. Throughout the SFEIR the Proponent has suggested that these issues will be addressed during the design phase or through continued discussions with stakeholders. MEPA must recognize that the issues we have identified are not minor design details that can deferred until later in the project entitlement process. They are issues of feasibility, viability and compatibility which by your own policies must be addressed before releasing the project from the MEPA process and, we believe, should have been resolved before granting the gaming license to the Proponent.

City Plans for Sullivan Square and Rutherford Avenue

As you are aware from our prior comment letters the City of Boston recently completed a three-year long planning process defining improvements for Sullivan Square and Rutherford Avenue that are intended to enhance the urban environment with greater pedestrian connectivity and new land development opportunities. The proposed $100 million roadway improvement project would remove existing roadway grade separations that form a barrier for pedestrian and bicycle travel east-west across Sullivan Square and Rutherford Avenue. By design, the proposed plans reduce the vehicle carrying capacity of the transportation system in order to create a more functional, safe and complete network for pedestrians and bikes. The Proponent's analysis provided in the DEIR demonstrated that adding resort traffic to the proposed roadway system would cause significant peak hour congestion and system failures in Sullivan Square and along Rutherford Avenue. Consequently, the resort proposal is incompatible with the City's plan for a more sustainable transportation system in Charlestown. 1

We would expect the MEPA process to require agreement on a viable, specific, long-range strategy before the process ends.

Interim Mitigation Plan

The SFEIR presents an interim mitigation plan for Sullivan Square and Rutherford Avenue. The mitigation plan proposes the upgrade of two existing streets, Spice Street and D Street on the edge of Sullivan Square and the redesign the existing roadway link across the Sullivan Station MBTA property between Cambridge Street and Main Street. New traffic signals are proposed along this roadway at Cambridge Street, Maffa Way and Main Street. No vehicular traffic capacity improvements are proposed in Sullivan Square (at the rotary) itself. The implication is that with this mitigation in place existing traffic will divert away from the rotary to the upgraded roadway links in sufficient numbers to offset the anticipated increase in new traffic in Sullivan Square associated with the resort. (Note that we could not find any analyses or data explaining or justifying these traffic reassignments in the SFEIR.) The mitigation plan was presented to BTD staff and its consultant in a 2

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series of meetings prior to the filing of the SFEIR. During these meetings the BTD repeatedly questioned the effectiveness of the plan citing concerns that spillback effects from the new signals will only worsen traffic conditions rather than improve them. BTD also asked that the proposed changes be evaluated with respect to morning commuter peak hour traffic demands. Morning peak hour traffic analyses were never supplied to the BTD and the simulations of the roadway system that might illuminate the anticipated vehicle spillback conditions were never presented to the BTD. The series of working meetings ended without the BTD ever approving the proposed mitigation plan or even reviewing the final supporting traffic operations analyses. 3

BTD's concerns regarding the feasibility and effectiveness of the proposed Sullivan Square mitigation plan relate to the unresolved issues cited above and others noted here.

1. A key element of this plan is the introduction of left-turns from Cambridge Street eastbound into the MBTA station (Beacham Street Extension) and on to Maffa Way and Main Street. The BTD, as part of its three-year planning study for Sullivan Square, had already investigated upgrading this roadway link and concluded that the introduction of left-turns at this location would be problematic. Accordingly, the City's plan for this location limited left turns to buses only. The close proximity of this intersection to the Cambridge Street intersection with the I-93 off-ramp would creating weaving and queuing problems. Traffic turning right from the ramp and then looking to turn left into Beacham Street Extension would get trapped and block through travel lanes on Cambridge Street. 4

2. There is an assumption that a large number of vehicles would divert to Spice Street and D Street to avoid delays entering Sullivan Square. However, this route is available to drivers today and it sees very little use. Upgrading the road won't necessarily speed up the travel time along the route so it is unlikely that this link upgrade will do much to reduce travel demands at the rotary. 5

3. The Proponent's plans show widenings along Cambridge Street and D Street that go beyond the existing roadway right-of-way. If the Proponent does not control the land on which the mitigation would be built there is no assurance that the mitigation will be built. (This same argument applies to mitigation proposed near the project entrance along Alford Street as discussed below.) 6

4. The existing peak hour vehicle queues on Cambridge Street begin at the Sullivan Square rotary and extend beyond the I-93 off-ramp. The SFEIR acknowledges this fact and notes that these queues in turn cause long queues to form on the I-93 off-ramp. A comparison of the existing Friday, PM peak hour volumes entering the Sullivan Square intersection of Cambridge Street, Maffa Way and Alford Street to projected Build with Mitigation volumes shows a 14 percent (400+ vehicle) increase <u>after</u> assumed diversions to Beacham Street Extension and Spice Street. Since no capacity improvements are proposed at the Cambridge Street, Maffa Way and Alford 7

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Street intersection, the queues extending back past the off-ramp and on the ramp itself will only worsen relative to existing conditions. The SFEIR reports that the rotary intersection will operate at 114 percent of capacity during the Friday, PM peak hour confirming that queues will continue to be a problem. 8

5. At the Beacham Street/Main Street intersection the proposed signalization will stop westbound Main Street traffic creating vehicle queues. Given the curved alignment of the roadway leaving the Sullivan Square rotary sight lines may be limited to the back of the queue creating a safety problem. 9

Additional concerns regarding the interim mitigation plan are included in the attached comments prepared by our consultant.

Broadway/Alford Street Plans

The City remains very concerned that the proposed roadway improvements at the main site driveway cannot be built as proposed and that even if they can be built that they will not provide adequate capacity to serve project related travel demands. Insufficient capacity along Broadway will 10
cause significant peak hour traffic congestion on Alford Street in the City of Boston. The access plan proposes the addition of two left-turn lanes on Alford Street in Boston requiring land takings from at least two parcels located within the City of Boston. In the Response to Comments section of the SFEIR the Proponent states that he "believes" he has control of the land needed to implement the 11
improvements. The Proponent should verify that he in fact has control of these parcels. At the same time the Proponent should consider the design issues that we raised earlier that could expand the taking areas. For example, the capacity analysis worksheets for the site driveway intersection 12
provide no indication of how pedestrians will be accommodated at the intersection. Saturday peak hour analyses for the site driveway intersection show the intersection operating at 92 percent of capacity and one movement operating over capacity without accounting for a pedestrian signal phase. If an exclusive pedestrian signal phase is proposed this will degrade intersection operations increasing queue lane lengths and storage requirements. Also, the design includes an abrupt lane shift heading southbound at the Dexter Street intersection. The Proponent has yet to demonstrate that 13
this is a safe design. A realignment to improve the design could lead to even more takings.

Related to the above are concerns that congestion will occur downstream of the site drive intersection causing vehicle queues to spill back through the site driveway intersection further 14
reducing its capacity and causing operational problems on Alford Street in Boston. North of the site driveway intersection the Beacham Street/Broadway intersection will reportedly operate over capacity (104 percent) during the Friday, PM peak hour. The Beacham Street approach to this intersection is expected to operate at 142 percent of capacity. Signal timings would need to be adjusted to balance delays at this intersection resulting in even longer delays on Broadway than 15
reported in the SFEIR. Delays on Broadway north of the site will only encourage more traffic to access the site to/from the south via Sullivan Square.

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Parking Supply is Inadequate

The City is also concerned that the Proponent's proposed parking supply is inadequate. An inadequate parking supply will cause traffic congestion on the site driveway and along Alford Street when the proposed on-site garage reaches capacity and vehicles queue up to enter. The Proponent has proposed a reduction in the parking supply by 300 spaces while at the same time adding 125 hotel rooms and 420 gaming positions relative to the FEIR plan. The Proponent's analysis indicates that the casino contributes the greatest share to the parking demand relative to other uses at peak. The SFEIR reports that the average parking supply for "similar gaming resorts" is 1.01 spaces per gaming position which would indicate a need for 4626 spaces at the Wynn resort. With only 3400 spaces proposed the BTD is concerned that the excess parking demand will end up queued on Boston streets. 16

The issues raised above are discussed in greater detail in the attached technical memorandum prepared by our technical staff and consultant. Additional issues are also raised in the memorandum. We thank you for providing us with the opportunity to comment on the Wynn SFEIR.

Regards,

Gina Fiandaca
Commissioner
Boston Transportation Department

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Stantec Consulting Services Inc.
55 Green Mountain Drive
South Burlington VT 05403
Tel: (802) 864-0223
Fax: (802) 864-0165

March 27, 2015
File: 195310830

Attention: Ms. Gina Fiandaca
Boston Transportation Department
City of Boston
City Hall, Room 721
Boston, MA 02201

Dear Commissioner Fiandaca,

Reference: EOEEA# 15060
Wynn Everett Resort SFEIR
Transportation

Per your request we have reviewed the transportation element of the Supplemental Final Environmental Impact Report (FEIR) for the proposed Wynn Everett resort dated February 17, 2015. We understand that the City opposes the project for a number of reasons. Primary among these is the fact that the project is incompatible with the City's plans for the redevelopment of Sullivan Square and for transportation system upgrades to create a sustainable, pedestrian friendly roadway network within Sullivan Square and along Rutherford Avenue. Our review of the SFEIR confirms that the "refined" Wynn project described in the SFEIR remains incompatible with the City's plans. Other shortcomings of the SFEIR are described in greater detail below.

In general we find that the SFEIR has failed to adequately address many of the comments raised in our review of the project's Final Environmental Impact Report. Concerns that have carried over from our earlier review include:

- Failure to discuss or demonstrate compatibility of the resort proposal with the City's redevelopment and transportation plan for Sullivan Square and Rutherford Avenue.
- The absence of any meaningful "penalty clause" associated with the proposed travel demand management and traffic monitoring plan.
- The use of vehicle trip generation forecasts for the traffic analyses that are based on optimistic and unsupported assumptions regarding the use of alternative modes.
- Uncertainty regarding the location and availability of off-site parking for employees.

Reference: Wynn Everett FEIR

- Fluctuating forecasts of the anticipated patron parking demand and an anticipated shortfall in the parking supply based on industry standards.
- Inaccurate analyses of the Site Driveway/Broadway/Alford Street intersection which do not consider accommodations for pedestrians within the signal timing plans.
- Failure to address concerns regarding the safety implications of a proposed abrupt lane shift on Alford Street southbound and the possible landtaking impacts associated with implementing a safe design.
- A lack of control of right-of-way necessary to implement roadway improvements that have been proposed along Broadway and Alford Street. This issue has since expanded to Cambridge Street and D Street with the latest Sullivan Square mitigation plan.
- Failure to offer any meaningful mitigation for the substantial traffic volumes that the project will add to intersections along Rutherford Avenue.

With regard to the first bullet point above the SFEIR could be found inadequate as it does not properly comply with the MEPA Certificate on the FEIR. Provided below are quotes from the Certificate requiring Proponent to work with the City and others to address the City's short-range and long-range plans for Sullivan Square. As noted, this work has not been undertaken.

> "I strongly encourage the Proponent to consult jointly with MassDOT and the City of Boston regarding the treatment of Rutherford Avenue and Sullivan Square in the SFEIR." No such joint meetings have taken place.

> "I expect the Proponent will continue to work with MassDOT, the surrounding cities and MAPC on both short-term and long-term solutions to address the project's impacts while supporting municipal redevelopment visions, roadway design plans, and improved regional connections." The Proponent has not initiated any discussions with the City regarding long-term municipal redevelopment visions and roadway design plans for Sullivan Square and Rutherford Avenue. The City, demonstrating its commitment to advance the Sullivan Square and Rutherford Avenue plans approved by Charlestown residents, commissioned a follow-up study to more closely examine the redevelopment potential of parcels of land in Sullivan Square. The Proponent's traffic engineer is a member of the consulting team that evaluated land use opportunities in the Square and is consequently certainly aware of the City's "redevelopment visions" and "roadway

Reference: Wynn Everett FEIR

design plans" yet failed to discuss these with the City in the context of the Wynn proposal.

"The Proponent should also seek consensus with MassDOT, DCR, and municipalities regarding the feasibility of proposed roadway improvements." The feasibility of proposed plans has been questioned given the Proponent's lack of control of key parcels necessary to implement proposed roadway widenings. Discussions of the revised mitigation plans with the Proponent have not demonstrated that the Proponent has full control of parcels needed for roadway widenings. In fact, it has only led to the identification of additional parcels that must be acquired from the MBTA to implement mitigation plans for Sullivan Square. No joint meetings with MassDOT highway division have occurred.

"The SFEIR should present alternatives for pedestrian access from the site to Sullivan Square." The Proponent has presented no such alternative plans.

"The SFEIR should include direct responses to comments to the extent that they are within MEPA jurisdiction." In many cases the Proponent's response to City of Boston comments is a referral to a lengthy section of the report with no direct response to the issue raised. In other cases the City's comments are dismissed with statements such as "MassDOT has approved this assumption". Recognizing that MassDOT and the City bring different perspectives to this project the Proponent should be required to address City comments directly as required by the MEPA Certificate on the FEIR.

Proposed changes in the project may also demonstrate non-compliance with the MEPA Certificate on the FEIR. The FEIR reported changes including four additional hotel rooms and 188 new gaming positions since filing the DEIR. The current "refinements" add another 125 hotel rooms and another 420 gaming positions. Combined with the refinements proposed in the SFEIR, each of the key independent variables the influence trip generation, gaming positions and hotel rooms, have increased by more than ten percent since filing the DEIR. Gaming positions grew 15 percent from 3972 to 4580 and hotel rooms grew 26 percent from 500 to 629. MEPA considers impacts increasing by more than ten percent as being significant and potentially requiring the filing of a Notice of Project Change. Clearly, the project's traffic impacts have increased by more than ten percent since filing the DEIR. 1

Reference: Wynn Everett FEIR

Section 1.2.3-The site access description mentions the four-lane boulevard that will serve as the primary access to the site. Parking garage access drives connect with this driveway where they may be impacted by queuing on the boulevard. No analysis has been provided of traffic operations along the boulevard. A capacity analysis worksheet found in the SFEIR appendix reports a garage exit drive operating at Level of Service F. A full analysis of operations along the boulevard should be provided as congestion here could affect operations along Broadway and Alford Street. 2

The SFEIR reports that certain parcels located along the alignment of the proposed service driveway have yet to be acquired by the Proponent. This creates uncertainty relative to the Proponent's ability to build the project as proposed. The impact analysis in the SFEIR would need to be redone if the property is not acquired. 3

The proposed service driveway is intended to, at times, hold taxis, accommodate service vehicles and provide emergency vehicle access. The Proponent should provide a detailed management plan describing how all of these activities can be accommodated within the limited width of the service drive. 4

Section 1.5.1-Table 1-3 lists topics discussed between the Proponent and MassDOT. Included on this list are discussions regarding mitigation for Sullivan Square and Rutherford Avenue in Boston. These roadways are under the jurisdiction of the City of Boston not MassDOT. Coordination between the City and MassDOT may be required to the extent that City proposed improvements affect operations of the MassDOT-owned I-93 ramp to Cambridge Street however, the City should be making decisions regarding mitigation measures on these roadways. Remarkably, the City of Boston was not invited to participate in any of these discussions between the Proponent and MassDOT. As detailed in this letter there are multiple technical inadequacies with respect to the mitigation plans and supporting traffic analyses. Until such time as the City, MassDOT and the Proponent thoroughly review and agree upon short-range and long-range traffic mitigation plans the project should remain in the MEPA process. 5

Item 50 in Table 1-3 describes a revised parking analysis completed for the project. It states that this analysis is based on assumptions regarding patron length of stay, arrival patterns and desired operating levels of service. These factors are not presented in the SFEIR. Instead, the SFEIR presents results of a shared parking analysis using Urban Land Institute data. The duration of stay and arrival pattern information in combination with the site trip generation forecasts would be valuable to check the parking calculations shown in the SFEIR. The shared parking analysis predicts parking demands that are well below parking supplies provided by comparable resorts. 6

Reference: Wynn Everett FEIR

Section 1.5.2-The Proponent describes the content of meetings between the Proponent and BTD prior to the submission of the SFEIR. Presumably the Proponent was seeking BTD approval of the proposed mitigation plan. While the Proponent did answer some questions asked by the BTD regarding the plan, the project proponent never provided critical information so that the City never fully vetted the proposed plan and the underlying assumptions (base traffic volumes, project trip generation and assignment, intersection operations, signal coordination and queuing impacts) associated with the plan. The BTD finds that the plan presented in the SFEIR does not provide adequate "interim" traffic mitigation for the project on Boston streets. The BTD still asks that a long-term mitigation plan also be developed by the project proponent before the project is released from the MEPA process. 7

Table 1-4 notes that the BTD asked to see an analysis of AM peak hour traffic operations before reaching any conclusions regarding the adequacy of proposed traffic mitigation plans. The City was told that AM peak hour traffic data was collected in early January of 2015. This City has not yet seen this data or analyses based on this data. Evaluation of AM peak hour traffic operations is critical to not only understanding project related traffic impacts but also in terms of understanding the impacts of proposed off-site roadway improvements. 8

The peak activity period for the casino does not coincide with the AM commuter peak hour. However, the hotel component of the project by itself generates more than 3000 daily vehicle trips (5310 trips) and would therefore require preparation of a full environmental impact report. The AM peak hour trip generation for a 650-room hotel is 345 trips compared to 390 trips for the PM peak hour. Consequently, an EIR prepared to address just the impacts of the hotel component of the project would include an analysis of both AM and PM peak commuter hours. The Proponent must be required to assess AM peak hour traffic operations. 9

Section 2.1-The SFEIR mentions mode share "goals" for the project. However, the trip generation forecasts provided in the SFEIR use the same mode share assumptions as the goals. The traffic forecasts in the SFEIR should be based on likely mode shares rather than the goals. The Proponent has not been able to provide solid evidence throughout the MEPA process to support assumed mode choices in the vehicle trip generation analyses. More conservative assumptions should be used. This is particularly true with respect to the three percent of trips assigned to the preferred park and ride service. Section 2.3.1 refers to "possible" parking accommodations at Logan Express lots. If appropriate parking cannot be found to support this service then the three percent goal may not be met. 10

Reference: Wynn Everett FEIR

Should the Proponent's mode choice targets be realized, the project will utilize significant capacity on the MBTA network affecting level of service on the Orange Line and MBTA buses operating out of Sullivan Station. The Proponent should be required to implement or fund capacity improvements on the MBTA system (purchase more rail cars/buses, upgrade signal systems to allow closer headways, etc.) to mitigate impacts on system capacity. 11

Section 2.1.1.1-The trip generation changes associated with the project "refinements" are suspect. The Proponent argues that the reduction in nightclub and retail space lowers the trip generation estimates more than the 25 percent increase in hotel rooms and ten percent increase in gaming positions increases the estimate. However, nightclub and retail space are typically considered ancillary uses in studies of other casino proposals with gaming positions and hotel rooms being the only independent variables considered in traffic forecasts. The traffic forecasts for the refined project should be higher than those for the FEIR proposal. Further evidence of the suspect trip generation analysis is the Proponent's conclusion that the refinements will decrease peak hour trips but increase daily vehicle trips. Similarly, Table 2.2 shows that the nightclub generates 143 Friday commuter PM peak hour trips while the 504-room hotel only generates 65 trips during this hour. Logically, the hotel will generate more trips at this time than a nightclub which may not even be open at this hour. The trip generation forecasts for the project should be revisited. 12 13

Section 2.1.2-Table 2-7 provides summaries of the trip generation forecasts. The Proponent states that only 63 percent of casino patrons and 76 percent of the other patrons will drive to the site. The Proponent should provide examples of other comparable facilities that have been able to achieve these mode choice figures or use more conservative traffic forecasts in the analysis. Are there other retail stores or hotels near the project site that have achieved the 24 percent non-auto mode share? 14

Section 2.1.3-The Proponent applied multiple traffic simulation programs to assess traffic operations in the study area. A complex model calibration process is described. The City was not involved in the model development and calibration process and consequently cannot attest the validity of the model results. The City is also cautious about using model "outputs" as definitive predictors of future traffic operations. Often, model results are used to compare alternative improvement plans to understand which alternative may provide better or best operations. Predictions of actual delays and vehicle queue lengths are less reliable particularly for systems that are operating at or near capacity. Independent of the intersection capacity analyses provided, the Cambridge Street/Maffa Way/Alford Street intersection operates with long queues during the existing Friday PM 15

Reference: Wynn Everett FEIR

peak hour. No capacity improvements are proposed for this intersection yet the Build with Mitigation condition traffic volumes will be 14 percent higher based on the SFEIR forecasts. Consequently, we can conclude that queuing conditions will only worsen under future Build with Mitigation conditions relative to existing conditions. A properly validated and calibrated model applied to the Build with Mitigation conditions should yield the same conclusion.

Section 2.2.1-New traffic counts collected in December 2014 are reportedly 13 to 15 percent higher than traffic counts used in the FEIR. Volume changes of this magnitude could lower intersection operations by a full letter grade. A table should be provided to compare existing conditions peak hour operations for both the FEIR and SFEIR. 16

Section 2.2.1.1-The Proponent commits to working with the City and others as the design of the lower Broadway/Alford Street mitigation continues. The mitigation plans involves landtakings from parcels that the Proponent may not control. Safe design of the southbound Alford Street lane shift at Dexter Street may require takings from the Boston Water and Sewer Commission. If these takings cannot be accomplished the mitigation plan cannot be built as proposed. The Proponent must first demonstrate that safe and effective mitigation can be built before the project is released from the MEPA process. 17 Presently, an S-turn is proposed on southbound Alford Street to "wrap" the southbound through lanes around the proposed northbound left-turn lanes and avoid impacts to the BWSC property on the west side of Alford Street. The S-turn results in a sudden, poorly-warned lane shift with southbound traffic having an offset view of the proposed traffic signal heads. Extending the left-turn lanes to the south to consider more conservative traffic forecasts for the project and to incorporate a pedestrian phase at the site driveway signal will only worsen the offset situation and increase potential impacts to the BWSC property. Without fully addressing these design issues now there is no assurance that the proposed plan can be constructed. 18

Section 2.2.1.2-The Beacham Street/Broadway intersection mitigation includes the addition of northbound and southbound left-turn lanes. The SFEIR references future Level of Service (LOS) D operations at the intersection as evidence that project impacts are fully mitigated. A closer examination of the operation analysis results in Table 2-14 shows that the intersection operates at 104 percent of capacity under Friday PM Build with mitigation conditions. The Beachman Street intersection approach will operate at 145 percent of capacity. The intersection is a bottleneck under existing conditions and the existing volume-to-capacity ratio only 101 percent. 19

Reference: Wynn Everett FEIR

Section 2.2.7.2-Comments pertaining to the Sullivan Square mitigation plan are provided below. Additional comments are provided relative to the lack of mitigation plans for Rutherford Avenue.

- The concept seeks to reduce the demand on the Sullivan Square rotary by enabling Cambridge Street traffic to access Maffa Way and Main Street via the MBTA Busway and the Beacham Street extension roadways. This concept introduces the risk of increased delay to drivers on Maffa Way and possible safety concerns on Main Street. The new signal at Maffa Way will interrupt the progression of southbound traffic on Maffa Way. 20

- The 2023 Build PM peak hour operation results forthe Cambridge Street intersections with the I-93 off ramp and with Spice Street/MBTA Driveway are overstated. There is no accounting for or adjustment made for the downstream blockage at the Cambridge Street / Maffa Way / Alford Street intersection where Cambridge Street traffic is served by only 33 seconds of the 100 second cycle. Signal green time allotted to Eastbound Cambridge Street at the ramp will not be fully utilized as traffic downstream will be blocked 67 percent of the cycle by the red signal at Alford Street/Maffa Way. 21

- At the Maffa Way intersection, the Cambridge Street right turn on red (RTOR) capacity of 477 vph is grossly overstated. 22

- At the I-93 off ramp, the rights turns from both lanes on the ramp will unnecessarily delay left turns from the ramp when Cambridge Street is blocked. Cambridge Street is blocked today due to the downstream signal at Maffa Way and Alford Street. The introduction of another signal on Cambridge Street at Spice Street, which is even closer to the ramp, will likely aggravate the existing condition. 23

- At Spice Street 80 percent of the cycle allows for eastbound movement on Cambridge Street but during all but 33 seconds this approach will be blocked due to downstream intersection operation. Also the RTOR movements onto Spice Street are overstated because these vehicles will not be at the stop line to make this choice. 24

- Westbound left turns into Spice Street will too often occupy the left lane essentially creating a default left turn lane and thereby restricting the through movements to the right lane. This could lead to queuing in the westbound direction on Cambridge Street. 25

Reference: Wynn Everett FEIR

- The operation of the critical stop controlled intersection of Alford Street and the Sullivan Square Rotary is not provided. This intersection is influenced by the very short weaving movements to Main Street and to Cambridge Street / Rotary that are also not discussed. Similarly, traffic operations where Rutherford Avenue northbound meets the rotary are not discussed nor are conditions where Main Street northbound meets the rotary. The merge on Alford Street north of the rotary was not analyzed. 26 27

- At the Beacham Street/Main Street intersection the proposed traffic signal will introduce periods when northbound Main Street is stopped and queues will form. Those queues will in turn introduce a very short sight distance in advance of the back of the queue. 28

- Pedestrian provisions at the traffic signals are not evident by the Synchro worksheets provided. Consideration of pedestrian signal phasing may result in reduced capacity for vehicular traffic movements and longer vehicle queues. 29

- Figures 2-77 and 2-80 show volume networks which do not properly add up around the rotary. The entering volumes do not match the exiting volumes. Reported volumes turning right onto Main Street southbound appear to be in error. (They are not comparable to volumes reported in prior MEPA documents.) To the extent that incorrect volumes have been incorporated into the operations analyses the analyses are flawed and the findings invalid. As a "disclosure" document, the SFEIR should be revised to reflect accurate calculations. 30

The SFEIR reports that 300 to 400 peak hour vehicles will be added to Rutherford Avenue south of Sullivan Square. These volumes are comparable in magnitude to the volumes added to Broadway in Everett north of the site. While the Proponent has committed millions of dollars to mitigate traffic impacts north of the site the commitment relative to Rutherford Avenue is to retime one signal, an improvement the City of Boston can accomplish through routine maintenance. Capacity concerns may arise at these intersections when the City moves forward with all or part of its plans to eliminate grade separations along Rutherford Avenue and create a more pedestrian and bike friendly corridor. The DEIR analysis showed that changes would be needed to these plans to accommodate casino resort traffic. The Proponent should be required to define necessary improvements and commit to meaningful and proportionate mitigation for Rutherford Avenue. 31

Reference: Wynn Everett FEIR

Section 2.2.7.3-The Proponent claims that proposed improvements in Sullivan Square are consistent with the City's long-range plan for the Square. The Proponent has not provided any analysis of the City's long-range plan since filing the DEIR. The DEIR demonstrated that the casino resort proposal is not compatible with the City's long-range plan. 32

Section 2.3.2-The City appreciates the Proponent's commitment to restrict on-site parking opportunities for employees. However, there is still uncertainty relative to where these employees will park and whether the suggested parking facilities in fact have the available capacity to accommodate employees. It's also a concern that employees parked in remote lots that are proximate to public transportation will be competing for spaces used by commuters destined to Boston. Any "displaced" transit riders destined to Boston may choose to drive further congesting Boston streets and roadways leading into the City. 33

There is substantial data available, some of it perhaps proprietary to Wynn, to define parking demands at casino resorts. The SFEIR even mentions an average parking ratio at comparable resorts of 1.01 spaces per gaming position. The City of Philadelphia, which is years ahead of Boston with respect to the implementation of casino gaming requires 0.8 spaces per gaming position and 0.5 spaces per hotel room. If the shared parking analysis results are ignored, the typical casino parking ratios indicate 4626 spaces for this resort. The Philadelphia standards would indicate 3979 patron spaces. These more simplistic but likely more reliable calculations indicate a significant shortage of parking at the subject site. The Proponent suggests that a parking shortage will force patrons to leave their cars at home and travel by alternative modes. The City believes this strategy may be effective for employees who regularly travel to the site but casino patrons, who visit infrequently, may not be knowledgeable of expected parking conditions at the time of their planned visit and are much less likely to shift modes. A greater concern for the City of Boston is that the parking supply cannot serve the future demand causing vehicles waiting to enter a full garage to queue on City streets. The Proponent should be required to build an adequate parking supply to serve the projected demand. As with the project trip generation forecasts, any adjustments to the parking analysis to account for mode choice should consider the likely share of travelers using alternative modes rather than the "goals" described above. 34 35 36

Section 2.4.2.2-The analysis of potential traffic congestion impacts on MBTA bus trip times is presumably based on the intersection capacity analysis and travel delay results in the SFEIR. As noted above there are multiple locations where the intersection capacity analyses are overly optimistic. The corrections proposed above should be considered in a revised transit impact analysis as they are likely to show that casino resort related bus travel delays will be greater than reported in the SFEIR. 37

Reference: Wynn Everett FEIR

Section 2.7.1-The following should be incorporated into the proposed transportation monitoring program.

- Include automatic traffic recorder counts on Broadway and Alford Street as well as on the other locations noted in SFEIR. 38

- Parking monitoring is proposed only once annually. There will be seasonal variations in parking demand and automated vehicle counting systems are available to track parking in real time. More frequent reporting on parking demand, perhaps weekly, is appropriate. 39

- Bus route ridership should be included for Sullivan Square routes as well. Patrons arriving from Boston are likely to realize that they can exit the Orange Line two stops before Wellington Station and access an MBTA bus at Sullivan Square. 40

- In Section 2.7.3 indicates that the Proponent will respond to "operational deficiencies" however, the monitoring program does not include a commitment to conduct operational analyses or even field observations to identify deficiencies. Standards for deficiencies should be defined and analyses and observations to quantify deficiencies should be part of the plan. 41

- Better define the monitoring program associated with Sullivan Square. The method for recording resort trips through the Square should be defined. The allowable volume limits are not known and need to be defined. 42

- The "then" actions included in the plan to respond to deficiencies are generally limited to non-structural, operational strategies. The operational strategies are also very similar to the strategies proposed as part of the project to meet the alternative travel mode goals. The City would like assurances that funding is available to address structural needs should deficiencies be observed and suggests that a significant contingency fund be available to the City to address these concerns. 43

The Gaming Commission has imposed a condition on the project as an incentive to limit site traffic to levels that are at or below the projections in the SFEIR. The Proponent would pay a certain dollar amount per vehicle trip for each trip recorded above the target number up to a maximum dollar limit. The condition would only apply for the first ten years of operation. This condition was not negotiated with City participation. The City believes that this agreement must be revised substantially to clarify monitoring methods,

Reference: Wynn Everett FEIR

timing of payments and access to funds among other things. Most importantly, the imposition of a cap on payments and the ten-year time limit eliminates any "incentive" component to this condition. Once the cap or ten-year time limit is reached the Proponent can generate as much traffic as it wants above the target figure without penalty. This is not how an incentive should work.

We anticipate that you will forward these comments to the MEPA Office. We are available to answer any questions you or members of the MEPA staff may have regarding these comments.

Regards,

STANTEC CONSULTING SERVICES INC.

Richard S Bryant

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Attachment B

Attachment C

BOSTON

Martin J. Walsh, Mayor

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
100 Cambridge St., Suite 900
Boston MA, 02114

RE: EEA #15060, SFEIR for Wynn MA, LLC; Everett, MA

Dear Secretary Matthew Beaton;

This letter is submitted in response to the SFEIR for the Wynn development in Everett. The Boston Parks and Recreation Department (BPRD) remains concerned about the impacts of the Wynn project on Ryan Playground and on the new parks and pedestrian amenities that will be created through the significant redevelopment proposed for the neighborhood around Sullivan Square in Charlestown.

This letter incorporates the BPRD's previous comments that were submitted on the DEIR (dated February 11, 2014) and on the FEIR (dated August 8, 2014). In short, this department feels that the proponent has not provided resolutions to the issues that have been raised in its previous comments letters. Those previous submittals are therefore attached to this letter for consideration in whole. BPRD respectfully requests that the issues raised in those letters be resolved prior to the issuance of a Secretary's Certificate.

In short – the Wynn analysis has failed to adequately consider the significant buildout proposed for Sullivan Square by the City of Boston. The DEIR included future roadway improvements to Sullivan Square to the benefit of its traffic impact analysis. However, it did not consider the proposed buildout of Sullivan Square in the Background Projects section (p. 4-74). The *Sullivan Square Disposition Study* (BRA, December 2013) vetted the proposed building footprints, number of floors and land uses for the new parcels through an extensive public process. This study considered future development parcels with a total area of about 4.25 acres, and projected a conservative buildout scenario of five to ten stories for each parcel (p. 19-27).

This significant volume of future development proposed for Sullivan Square needs to be included in the Wynn background analysis, in order to accurately assess the project's impacts on this neighborhood in terms of traffic congestion, increased traffic volume, decreased accessibility to open space and meso-scale air quality 1

Thank you for your consideration of the BPRD's concerns expressed in this letter, and in those that are attached.

Sincerely,

Carrie Marsh

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Austin Blackmon, Chief, Environment, Energy and Open Space, City of Boston,
Christopher Cook, Commissioner, Boston Parks and Recreation Department
Anthony Gallagher, Associate, Office of Gaming Accountability, City of Boston

Attached: BPRD comment letters on EEA #15060 dated February 11, 2014 and August 8, 2014

Boston Parks and Recreation Department
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: 617-635-4505 / Fax: 617-635-3173

BOSTON

Martin J. Walsh, Mayor

August 8, 2014

Secretary Maeve Vallely Bartlett
Executive Office of Energy and Environmental Affairs
100 Cambridge St., Suite 900
Boston MA, 02114

RE: EOEEA #15060, FEIR for Wynn MA, LLC; Horizon Way and Lower Broadway, Everett, MA

Dear Ms. Bartlett;

This letter is in response to the request for comments on the FEIR for the development proposed by Wynn MA, LLC in Everett. The City of Boston Parks and Recreation Department is interested in the potential impacts of the project on Ryan Playground, as well as on the parks that will be provided through the Sullivan Square realignment and redevelopment project in Charlestown.

Summary of Issues

The following issues were presented in the comment letter on the DEIR from this Department dated February 11, 2014. While brief responses were provided in the FEIR, it is the opinion of this Department that the resolution of these matters requires further analysis and mitigation.

- Inclusion of the build out of the Article 80 parcels freed by the realignment of Sullivan Square;
- Congestion in the vicinity of the parks, and a "hotspot" analysis of compromised intersections;
- Increased vehicular, MBTA and tour bus traffic volume on pedestrian access to the parks;
- Increased vehicular, MBTA and tour bus traffic on the air quality around the parks.
- Connection to current planning processes underway for Ryan Playground and Sullivan Square;
- In addition to the issues above, this Department recommends that any open space provided on the Wynn site should be permanently protected in perpetuity through the Chapter 91 License.

Inclusion of the Build out of Sullivan Square

This Department remains concerned that the Wynn proposal has not adequately considered the proposed build out of the significant development parcels to be freed by the realignment of Sullivan Square in Charlestown, with particular regard to traffic congestion, increased traffic volume, and decreased accessibility around Ryan Playground and the parks to be developed at Sullivan Square.

The DEIR indicated that most of the intersections around Sullivan Square had a decreased level of service (LOS) with the Wynn development. However, the DEIR included the proposed roadway improvements at Sullivan Square to the benefit of its analysis, but omitted the proposed build out of the parcels that will be freed for Article 80 redevelopment by the realignment of Sullivan Square.

The seven parcels that will be freed for redevelopment by the realignment of Sullivan Square were conceptualized through a recent BRA planning effort. The proposed building footprints, number of floors and uses were vetted through a public process to create estimates that are included in the *Sullivan Square Disposition Study (12/2013)*. This buildout should be considered as part of the Wynn analysis.

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1010 Massachusetts Ave., Boston, MA 02118 / Tel.: 617-635-4505 / Fax: 617-635-3173

Coordination with Planning and Improvements in Boston

This Department recommends that the proposed Wynn development should integrate Ryan Playground into its planning and development processes. Ryan Playground is an active recreation area and efforts should be made to ensure that the Wynn development does not detract, and rather enhances the pedestrian, bicycle and vehicular access to that park. Also, there should be no negative impacts to the parking available at Ryan Playground.

Ryan Playground is an active recreational area that generates a vehicular, bicycle and pedestrian traffic. The vehicular traffic generated by Ryan Playground should be included in the Wynn analysis, and the impacts of the Wynn development on the congestion and access to the park should be mitigated.

Further, the proposed Wynn development should be assessed for potential connections to the pedestrian environment, parks and greenway that will be developed in the vicinity of Sullivan Square through the disposition of land from the traffic realignment. These parks and pedestrian ways will be developed by the Article 80 process, as part of the BRA's redevelopment of the intersections around Sullivan Square.

Congestion, Air Quality and Other Impacts on Boston Parks

With regard to the air quality around the parks, this Department is concerned about the air quality issues that may be generated by increased traffic congestion around the parks, and also the potential air quality impacts generated by the remediation of the toxic site.

Permanent Protection of On-site Open Space

In addition, this department is concerned about the permanent protection of open space proposed in the FEIR, and requests that the Chapter 91 license process ensure that all open space that is provided within the tidelands be permanently protected in perpetuity through language in the Chapter 91 License Master Deed, conservation restrictions, conveyance to a non-profit or government entity, or other mechanisms.

Community Benefits

This Department would like to recommend that any community benefits that are negotiated for the development should consider the mitigation of impacts to Ryan Playground, and the proposed improvements to Sullivan Square as appropriate.

Sincerely,

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Brian Swett, Chief, Environment, Energy and Open Space, City of Boston,
Christopher Cook, Interim Commissioner, Boston Parks and Recreation Department
Liza Meyer, Chief Landscape Architect, Boston Parks and Recreation Department
Anthony Gallagher, Associate, Office of Gaming Accountability, City of Boston

BOSTON

Martin J. Walsh, Mayor

February 11, 2014

Boston - BPR
1-7

Richard K. Sullivan, Jr.
MEPA Office
Executive Office of Energy and Environmental Affairs
100 Cambridge St., Suite 900
Boston MA, 02114

RE: EOEEA #15060, DEIR for Wynn MA, LLC

Dear Mr. Sullivan:

This letter is in response to the request for comments on the DEIR for the development proposed by Wynn MA, LLC. The City of Boston Parks and Recreation Department has reviewed the project - in particular for potential impacts to Ryan Playground and the parks that will be provided through the Sullivan Square realignment and Article 80 redevelopment in Charlestown.

The proposed project should be carefully analyzed for the following potential impacts:

- Connection to current planning processes underway for Ryan Playground and Sullivan Square;
- Congestion in the vicinity of the parks, and a "hotspot" analysis of compromised intersections;
- Increased vehicular, MBTA and tour bus traffic volume on pedestrian access to the parks;
- Inclusion of the build out of the Article 80 parcels freed by the realignment of Sullivan Square;
- Increased vehicular, MBTA and tour bus traffic on the air quality around the parks.

This Department recommends that the proposed Wynn development should integrate Ryan Playground into its planning and development processes. Ryan Playground is approximately less than .5 miles from the proposed Wynn development and directly on the most heavily travelled point of egress to the site. 1
Ryan Playground is an active recreation area and efforts should be made to ensure that the Wynn development does not detract, and rather enhances the pedestrian, bicycle and vehicular access to that important park. Also, there should be no negative impacts to the parking available at Ryan Playground.

Further, the proposed Wynn development should be assessed for potential connections to the pedestrian environment, parks and greenway that will be developed in the vicinity of Sullivan Square through the disposition of land from the traffic realignment. These parks and pedestrian ways will be developed by 2
the Article 80 process, as part of the BRA's redevelopment of the intersections around Sullivan Square.

Boston Parks and Recreation Department
1010 Massachusetts Ave., Boston, MA 02118 / Tel.: 617-635-4505 / Fax: 617-635-3173

It must be noted that the Wynn DEIR included the proposed roadway improvements at Sullivan Square to the benefit of its analysis. However, it apparently omitted the significant proposed build out of the parcels that will be freed for Article 80 redevelopment by the realignment of Sullivan Square. The significant proposed build out of Sullivan Square should be included in the Wynn DEIR analysis. 3

This Department is concerned about the potential for congestion, increased traffic volume, and decreased accessibility around Ryan Playground and the parks that will be developed through the Article 80 process at Sullivan Square. The Wynn DEIR indicated that most of the intersections around Sullivan Square had a decreased level of service (LOS) with the Wynn development, even with the omission of the future build out of the parcels around Sullivan Square through the Article 80 process.[1] 4

Ryan Playground is an active recreational area that generates a vehicular, bicycle and pedestrian traffic. The traffic generated by Ryan Playground should also be included in the Wynn analysis, and the impacts of the Wynn development on the congestion and access to the park should be mitigated. 5

With regard to the air quality around the parks, this Department is concerned about the air quality issues that will be generated by increased traffic congestion around the parks, and also the potential air quality impacts generated by the remediation of the toxic site.[2] 6

Finally, this Department would like to recommend that any community benefits that are negotiated for the development, should consider the mitigation of impacts to Ryan Playground, and the proposed improvements to Sullivan Square. 7

Sincerely,

Carrie Marsh

Carrie Marsh, Executive Secretary
Boston Parks and Recreation Commission

cc: Elizabeth DelloRusso, Senior Assistant Corporation Counsel, City of Boston

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[1] The Parks Department incorporates by reference hereto the Comment Letter of the Boston Transportation Department and the Stantec Consulting memorandum.

[2] The Parks Department incorporates by reference hereto the Comment Letter of the City of Boston Environment, Energy and Open Spaces Cabinet.

Attachment D

CITY OF BOSTON
THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 709 • Boston, MA 02201 · 617/635-3850 · FAX: 617/635-3435

March 27, 2015

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attention: Anne Canaday, MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: EOEEA #15060
Wynn Resort in Everett

Dear Secretary Beaton:

The City of Boston opposes the proposed project for myriad reasons. Primary among these is that the project is incompatible with the Boston's redevelopment goals and plans for Sullivan Square; it will have significant additional impacts on Boston. The City is committed to protecting and enhancing the quality of life for all Boston residents, particularly for those who live and work in Charlestown.

The City of Boston Environment, Energy and Open Space Cabinet (EEOS) offers the following comments on the Supplemental Final Environmental Impact Report (SFEIR) submitted by Wynn MA, LLC (Wynn) for the above-referenced project.

As Wynn's responses to comments on the December 16, 2013 Draft Environmental Impact Report (DEIR) were deficient, some EEOS comments on the June 30, 2014 Final Environmental Impact Report (FEIR) were the same or similar. The SFEIR lacks substance or is silent on important matters, leading to further repetition. Wynn has not demonstrated fulfillment of its obligation to avoid, minimize or mitigate damage to the environment.

Details regarding the following issues remain lacking, despite Boston's consistent comments and requests for information from Wynn:

- air quality
- climate change and sea level rise
- construction impacts and mitigation
- contaminated materials and landside hazardous waste remediation
- contaminated sediment and waterside hazardous waste beyond the proposed project site and related remediation
- regional impacts
- Transportation Demand Management (TDM)

Regional Impacts

In response to our comments that the analysis of the proposed project has not considered induced growth and to our question asking about the potential for business and job loss as a result of the proposed project, Wynn side-stepped the issues by stating that the project area would grow with or without the project and that net new income would be generated. These are not well thought-out responses and disregard potential problems that might well be addressed for the greater good. 1

Air Quality, Energy, Greenhouse Gas Emissions

Based upon the potential public health and welfare impacts that would be associated with remediation, construction, operation and the vast amount of new traffic that the proposed casino project would generate in Boston, the City has made numerous requests for analyses and information throughout the MEPA process. We repeat the following:

- Due to the traffic impact on Sullivan Square by the proposed project, a microscale analysis should be required. Wynn's response is that the analysis is not required.
- GHG analysis for construction equipment would provide valuable information about how to minimize the impact of construction on air quality. Wynn's response to this comment is that the analysis is not required.
- At the City of Boston's request, Wynn committed during a 2013 meeting with City staff and consultants to conduct an analysis to identify the avoided greenhouse gas (GHG) emissions associated with a proposed water shuttle having a projected three percent more share. The mode share is now projected to be six percent. The mode share projections have not been substantiated and the analysis has not been conducted. Wynn now says that the analysis is not required. 2

Boston asked in DEIR comments that the FEIR identify the number of shuttle buses expected to provide services, the fuel that would be used and a description of how bus drivers would be accommodated during layovers so that bus idling (regardless of fuel source) would not be used for heating or cooling. In the response to this comment, Wynn refers the reader to Section 4.5. There is no reference in that section or elsewhere in the FEIR to Boston's comment and concern. 3

Alternative-fuel buses should be the standard for all shuttle buses. 4

In order to minimize diesel emissions from the site, we suggest the use of PV battery back-up for life-safety systems. 5

Construction

The City of Boston has expressed numerous times a concern about the plan to conduct site remediation and project construction concurrently, with particular emphasis on:

- PM2.5 emissions and drift
- dust control in general, best addressed through a measure analysis
- PM exposure along truck routes
- additional potential impacts along truck routes
- the lack of community and Boston municipal input into the development of a Construction Management Plan (CMP) and opportunity to comment on a draft plan

Wynn has indicated that during all remediation and excavation activities, both work-zone and perimeter real-time Particulate Matter (PM2.5) monitoring will be conducted to verify compliance with health standards. The locations and timing of perimeter monitoring, staff oversight and other details are not described. 6

Wynn further responded by indicating that MCP requirements will be met, other (unspecified) regulations followed and a CMP developed. In fact, Wynn now states that the details Boston has requested are not available and a CMP not prepared. I note, however, that Section 1.2.5 of the SFEIR, REMEDIATION, indicates the following:

- "On February 5, 2015, Wynn submitted to MassDEP an Eligible Person Submittal and Tier II Classification Submittal assuming responsibility for the further design and implementation of the remediation of the MCP Disposal Site that includes the Project Site. As indicated in that submittal, the Proponent's Licensed Site Professional ("LSP") has developed, in consultation with MassDEP, a plan to complete the remediation of the contamination at and from the Project Site as soon as all necessary approvals are received from the regulators responsible for those approvals.

The plan developed by the LSP should have been included in the FSEIR. It should now be circulated to the SFEIR distribution list for comment and questions. 7

Wynn has not directly responded to the EEOS FEIR comment regarding the necessity that the public and municipalities be accorded the opportunity to review and comment on the CMP. Rather, there is reference to Wynn's intent to, "comply with the public involvement requirements set forth in the Massachusetts Contingency Plan" including development of "a detailed plan for communicating with interested parties regarding ongoing construction activities. In addition to on-site postings and signage, components of this plan will include, but not be limited to: (i) establishment of a project website which will include contact information as well as a location for input and feedback from the public, (ii) scheduling and advertising quarterly public information meetings and (iii) a subscription function for interested members of the public to leave contact information in order to receive project updates and notifications." While these steps are necessary, the vast majority will occur during the construction period and do not address the issue of public and municipal input into development of a detailed, effective and enforceable CMP. 8

In comments on the DEIR, Boston requested the identification of truck routes and evaluation of project-related PM to which residents would be exposed. In the FEIR response to comments, the reader was referred to Chapter 12 for truck routes. There were no route maps or other reference to trucks routes in Chapter 12; our comments noted their absence. There is no response to our DEIR or FEIR comments nor are truck routes delineated in the SFEIR. 9

Waterside Issues Including Contaminated Materials and Hazardous Waste Remediation

Section 1.2.5.2 of the SFEIR, WATERSIDE REMEDIATION PLAN, states that the Phase III Remedial Action Plan will evaluate the feasibility of achieving a Permanent Solution for the waterside contamination at and from the Project Site. Boston strongly believes that a permanent solution is called for under these circumstances and should be mandated, perhaps under Section 61 Findings.

Wynn is receiving the benefits that come with the designation of proposed dredging as maintenance dredging, despite the 91 years that have elapsed since the most recent dredging activity. Implementing a permanent solution beyond the project site for the length of the dredge area is a fair match for these benefits. In addition, the impacts of dredging cannot be isolated on the Everett side of the Mystic River, just as sediment transport back

to the Everett side is inevitable. Cleaning half of the waterway would not be an efficient use of resources as the improvement would have limits.

There is still no indication of a regulatory determination in regards to 310 CMR 9.3.2, Categorical Restrictions on Fill and Structures. The status of the proposed project should be clarified and a mechanism identified to notify commenters of a decision. 10

Climate Change, Seal Level Rise

The SFEIR does not address the retreat of wetlands due to sea level rise. As the loss of wetlands on either side of the river will affect the other, a maintenance plan or other means to monitor and sustain necessary wetland resources should be part of Wynn's operational system. 11

Transportation Demand Management

- We believe that ongoing, permanent TDM monitoring is the only way to ensure that a TDM program is capturing the maximum number of users. The City requests a summary of the basis for the 10 year term. 12
- How will patrons be encouraged to provide transportation use information? 13
- A 41% employee driving mode share seems high. Is employee parking being subsidized by Wynn? If so, what is the subsidy? 14
- To ensure convenience and prevent the use of taxis, potential MBTA patrons, including employees, should be provided with information about schedules for the buses identified by Wynn as useful for access to the proposed project to ensure. Buses from Sullivan Station, for example, offer service that may be only minimally helpful.
    - #104 – one hour headways after 7:20 p.m. every day; 35-45 minute headways on Saturdays
    - #105 – service ends at 7:15 p.m. Monday through Friday; headways are hourly on Saturdays
    - #109 – 15-30 minute headways until 1:05 a.m. every weekday; 45 headways on Saturdays with several that are 55 minutes

Thank you for the opportunity to comment.

Sincerely

Austin Blackmon
Chief of Environment, Energy & Open Space

Boston Redevelopment Authority

Boston's Planning & Economic Development Office

Martin J. Walsh, *Mayor*
Timothy J. Burke, *Chairman*
Brian P. Golden, *Director*

One City Hall Square
Boston, MA 02201-1007
Tel 617-722-4300
Fax 617-248-1937

March 27, 2015

Via U.S. Mail & Electronic Delivery
Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: EOEEA #15060
Supplemental Final Environmental Impact Report (FEIR) Review of Wynn Resort

Dear Secretary Sullivan:

The Boston Redevelopment Authority is pleased to have the opportunity to comment on the Supplemental Final Environmental Impact Report (FEIR) submitted by Wynn MA, LLC ("Wynn") for the above referenced project. The Boston Redevelopment Authority ("BRA") joins the City of Boston in its review of the Wynn Supplemental FEIR.

The BRA fully endorses the comments submitted by the City of Boston including its Transportation Department and Environment Department and the Parks Department. Our comments in the attached documents speak to the deficiencies of the project's consistency with the City's long term planning, urban design and economic development objectives.

Thank you for your consideration, review and adoption of the City of Boston's thorough comments. Please do not hesitate to contact me with any questions you may have.

Very truly yours,

Brian P. Golden
Director

Equal Opportunity / Affirmative Action Employer / Equal Housing Opportunity

Charlestown Planning

The project will prevent the implementation of long term planning objectives for the Charlestown neighborhood. It will also result in the inability to repurpose vehicular infrastructure and cause the loss of development capacity as planned in the Sullivan Square area. 1

In 2013, the Boston Redevelopment Authority Board of Directors approved a plan for disposal of publicly-owned land and subsequent new development on that land. This Board-approved plan, the culmination of over a decade of transportation and land-use planning efforts, was authored by BRA staff and a team of consultants based on a public process that included members of the Charlestown public and an Advisory Group.

This land use plan is predicated on the earlier Boston Transportation Department roadway redesign known as the "surface option". Fundamental to the implementation of the future plan for Sullivan Square is the redevelopment of vehicular transportation infrastructure for the expansion of pedestrian facilities, public amenities, open space and new development parcels centered on the MBTA Sullivan Square station.

The inability to repurpose vehicular infrastructure as planned and would represent a loss in planned and necessary development capacity in Boston for housing, residential, retail, office and other uses for which Sullivan Square had been targeted. In addition to the parcels addressed in the 2013 plan, the "surface option" would also unlock new development capacity all other areas adjacent to the Sullivan Square MBTA station, by creating transit-oriented development sites that would allow for more efficient, safe and direct access to the station by means other than personal vehicle or shuttle bus.

Taken together, this loss of development capacity would have multiple short and long term impacts. In the short term, the plan for an estimated 6.84 million square feet of development would represent an estimated $1.29 billion investment. Construction activity would generate an estimated $762.52 million in Gross Regional Product (GRP) and an estimated $122.51 million in personal income over an 18 year development period. In terms of jobs, the construction would create an estimated average of 275 construction jobs and 78 indirect and induced jobs over an 18 year period for Suffolk County.

In the long term, estimated economic impacts are based upon the proportion of space allocated for commercial and retail uses, which would provide permanent new jobs in Boston. Given the estimated 3.82 million square feet of commercial and retail space development potential that would be unlocked by the original roadway plan for Sullivan Square, the estimated long-term direct job impacts are 454 retail jobs and up to 10,031 office jobs. [1]

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[1] Sources: Nelson, A. (2004). Planner's Estimating Guide: Projecting Land-Use and Facility Need (pp.43, Table 4-2). Chicago, IL: APA Planners Press.; CoStar Group, (2011). The Costar Office Report, Boston Office Market (pp.6, Table "SF Per Employee By Industry"; Energy Star space use information. (n.d.).

In addition, the loss of development capacity would represent a loss of city tax revenue from conversion of exempt land (city-owned and MBTA-owned) to taxable land, as well as the redevelopment of privately-owned land. The following property tax impacts are based on 2014 residential and commercial property tax rates for the City of Boston. (Note: property tax impact estimates do not account for exemptions or tax breaks. The residential tax rate for Boston is $12.58 and commercial tax rate is $31.18 per $1,000 assessed value.) The potential annual commercial property tax impact following the complete build out is an estimated $21.60 million. The potential annual residential property tax impact following the complete build out is an estimated $7.66 million.

Further, in addition to the tax implications of unrealized new development and redevelopment, there is also an anticipated loss in tax revenue and personal equity from existing property owners would choose not to redevelop. Even in the absence of redevelopment, area property owners would be expected to see an increase in property values as a result of improvements to area pedestrian infrastructure, access to MBTA, new employment opportunities, commercial amenities, open space and other quality of life improvements. Such an unrealized boost in land values would ripple beyond private property values, and also manifest in an unrealized boost in tax revenue to City of Boston.

Water Transportation Planning

The project's water transportation objectives remain very unrealistic and directly risk overwhelming land based transportation systems including roadways in Charlestown. The project's veiled reliance on vehicle access through Charlestown will cause both immediate and long term economic and quality of life harm to the Charlestown neighborhood. The Charlestown neighborhood is relying on the implementation of the Sullivan Square Plan to dramatically improve pedestrian ease and safety, air quality improvements and general well-being of a planned neighborhood scale street grid system. The neighborhood will also benefit through favorable property values. 2

The City of Boston anticipates new development in Sullivan Square. The benefits to the City from this new growth reach beyond tax revenues to direct benefits for the Charlestown neighborhood with better access to public transportation, increased work-force housing and commercial and retail establishments within reasonable walking and bicycling distances throughout the neighborhood.

The Supplemental FEIR failed (as have all previous submissions) to address the limitations of the ferry access caused by the clearance of the Alford Street bridge. This issue, combined with the lack of docking and berthing area throughout Boston's waterfront to accommodate the project's ferry trip assumptions casts extreme doubt on water transportation being a plausible mode of access to and from the project area. 3

Combining the concerns raised above with the new assertion that water transportation will now account for 6% of trips to and from the project site, leaves us to not only question the proponents professional skill set on this matter, it also highlights the insincerity of proponent to the needs of Charlestown and the severity of the project impacts.

Environmental

The Supplemental FEIR failed to include a detailed Construction Management Plan (CMP), thus failing to address the concerns and issues that have been expressed in responses to all previous submissions. 4

The magnitude of the existing site contamination and anticipated complexity of the cleanup and remediation necessitate an equally complex and comprehensive cleanup and remediation plan but the Supplemental FEIR failed to include one. Due to the fact that both remediation and construction will occur concurrently, priority should be given to the development and implementation of the RAM plan ("Plan"), including but not limited to the inclusion of mitigation measures to avoid and minimize adverse impacts. 5

It is imperative that RAM plan be disseminated, as per the Supplemental FEIR, the Plan was scheduled to be submitted to the MassDEP for review and approval in February of 2015 and if approved, "components" of the Plan are scheduled to commence in the Spring of 2015. 6

The Supplemental FEIR does not include a detailed future analysis of carbon monoxide levels at the intersections where the level of service (LOS) is expected to deteriorate to a D and the project is projected to cause a 10 percent increase in traffic or where the LOS is E or F and the project contributes to a reduction in the LOS. The MassDEP methodologies and parameters for air quality analyses should be adhered to and mitigation measures to eliminate or avoid any violation of air quality standards should be included and described. 7

Urban Design

The project does not currently include a commitment to enhance pedestrian connections between the project and Sullivan Square via Broadway/Alford Street. This project as currently proposed will not be a positive catalyst for the surrounding area and unfortunately does not offer opportunities to change the current auto-oriented street to a more pedestrian-oriented one. 8 The project should include wide sidewalks, tree plantings, and pedestrian-oriented enhancements within the area surrounding the project. 9

The tower design, as described in the Supplemental FEIR is much better than designs included in previous submissions, as it is simple and contemporary. However, the choice of heavily tinted/reflective glass is based on a prototype which exists in a desert environment with very different environmental considerations. This tower will be perceived as part of the Boston skyline, particularly when approached from the north on Route 93S. More transparent and less reflective glass types, more similar to the local context will help the tower relate to the surrounding area and mitigate the visual impact of the very wide massing of the tower slab. 10

The project design should include a reduction in the height of the "Wynn" logo at the top of the

building. To avoid visual clutter of the skyline and relate the signage to the scale of the building, maximum letter height should be no larger than 10'-0", particularly if the signage is illuminated.

City of Medford

OFFICE OF COMMUNITY DEVELOPMENT

City Hall - Room 308
85 George P. Hassett Drive
Medford, Massachusetts 02155

LAUREN DILORENZO
Director

Telephone
(781) 393-2480
FAX: (781) 393-2342
TDD: (781) 393-2516

March 24, 2015

RECEIVED
MAR 27 2015

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: SFEIR Wynn Everett

Dear Secretary Beaton:

Please accept these comments on behalf of the City of Medford regarding the Supplemental Final Environmental Impact Report (SFEIR) for the proposed Wynn Everett project.

The SFEIR provides some additional information regarding concerns raised in the review of the FEIR. However, serious concerns still exist relative to the Exit 31 Southbound off-ramp from Route 93 and the surrounding intersections at Harvard Street/Mystic Valley Parkway (Route 16) and Mystic Avenue (Route 38). All indications are that this area will degrade beyond the existing LOS F and that congestion may result in its backup onto Route 93. Additional study and mitigation beyond signal timing is necessary to mitigate adverse impacts. 1

Wynn commits up to $1.5 million dollars toward design costs for a design of a grade separation at Wellington Circle. This proposed mitigation provides neither a time schedule for the commencement of study and design, a pledge of an exact amount of funds, nor a structure for the coordination of this effort, which includes the MBTA, DCR, MassDOT, Cities of Everett and Somerville as well as Medford and private property owners. A well funded strategy should be created with a plan for implementation of parts of the project prior to the opening of the Casino. 2
It must be clear that the City of Medford will not support an elevated roadway in this area nor a design that adversely affects residents and businesses. The amount of funds is not sufficient to ensure a proper design. What is the proposed source of the balance of funds? The Casino will have adverse impacts within the City of Medford. The Commonwealth does not have sufficient funds to address these infrastructure needs. The Proponent must be required to resolve these issues prior to receiving approvals or occupying the building. 3

Attached to this letter is a copy of the Peer Review conducted by the City's consultant Greenman-Pedersen, Inc. These comments are incorporated as part of this letter. Thank you for your consideration.

Very Truly Yours,

Lauren DiLorenzo, Director

Attachment

cc: Michael J. McGlynn, Mayor
Marc Draisen, Executive Director
Metropolitan Area Planning Council

GPI Greenman - Pedersen, Inc.
Engineering and Construction Services

REF.: MAX-2013011.04

March 24, 2015

Mayor Michael J. McGlynn
City of Medford
85 George P. Hassett Drive, Room 202
Medford, Massachusetts 02155

ATTENTION: Ms. Lauren DiLorenzo

SUBJECT: City of Medford
Wynn Everett SFEIR
Transportation Peer Review

Dear Mayor McGlynn:

As requested, ***Greenman-Pedersen, Inc. (GPI)*** has conducted a transportation peer review of the Wynn Everett Casino (Project) Supplemental Final Environmental Impact Report (SFEIR) prepared by Fort Point Associates, Inc. The focus of this review is Chapter 2 – Transportation - of the SFEIR prepared by Howard/Stein-Hudson Associates, Inc. (HSH). GPI has reviewed the projected traffic impacts within the City of Medford and the adequacy of the proposed mitigation to address these impacts. Additionally GPI has evaluated the responses to comments raised by GPI in our previously submitted peer reviews of the Draft Environmental Impact Report (DEIR) and Final Environmental Impact Report (FEIR) submitted January 8, 2014 and August 7, 2014, respectively.

The SFEIR provides additional information pertaining to comments related to the FEIR filing. In regards to the City of Medford this information addresses some of the comments raised during GPI's review of the FEIR, while others remain outstanding. GPI continues to be concerned regarding the proposed future operating conditions at the Harvard Street/Mystic Valley Parkway (Route 16)/Mystic Avenue (Route 38)/I-93 Exit 31 Southbound Off-Ramp cluster of intersections. The proponent continues to fail to acknowledge the adverse impacts proposed signal timing changes will have on the South Medford neighborhood and the Mystic Avenue business area. In addition GPI remains concerned about the viability of Wellington Circle to accommodate future demands. Despite the proposed improvements which have been committed to prior to opening, the development of a roadmap to a long-term solution remains of importance. Our comments related to the impacts of employee parking locations within Medford continue to require further clarification. Finally GPI reiterates that more noted physical improvement measures should also be included as potential mitigation requirements if deemed appropriate through the traffic monitoring program.

PROJECTED TRAFFIC IMPACTS

The utilization of roadways within the City of Medford to access/egress the Project site will cause measurable impacts at key locations, specifically during the critical evening and Saturday peak

hours. As discussed in detail below, these impacts continue to raise concerns regarding the impact to local and regional mobility and the potential for vehicles to seek alternate "cut-through" routes through the City of Medford to access/egress the Project site.

Intersections 38 & 39 - Harvard Street/Mystic Valley Parkway (Route 16)/Mystic Avenue (Route 38)/I-93 Exit 31 Southbound Off-Ramp

GPI's review of the DEIR noted a significant oversight within the transportation impact analyses related to the projected impacts on operations at the intersection of Mystic Valley Parkway (Route 16)/I-93 Southbound Exit 31 Off-Ramp (FEIR Intersection 39). This oversight involved the exclusion of the predicted project-trips utilizing the southbound left-turn at the intersection in order to access the Project site. This oversight translated to negligible project-related traffic impacts being reported at this critical intersection; however these analyses did not represent actual impacts as it did not align traffic volume projections stated within the DEIR.

In the FEIR this comment was addressed to provide actual project-related impacts at these key intersections. Mitigation was also proposed at that time to offset project related impacts which included signal timing/phasing adjustments. The SFEIR projects an increase in 102 and 122 vehicle trips on this critical left-turn movement during the Friday evening and Saturday afternoon peak hours, respectively. This represents an overall increase in traffic volumes of 8% and 11% during the peak hours, when comparing to the future No-Build at this location.

The Route 16 Southbound Connector approach is currently operating at a LOS F during the Friday evening peak period, and will continue to do so under the 2023 No-Build Condition and Build conditions. Under Existing Friday evening conditions the Mystic Valley Parkway Southbound Connector left-turn operates over capacity (v/c = 1.08) at LOS F with 91.4 seconds of delay. Average queues extend back 387 feet with 95th percentile queues extending to 433 feet based on revised SimTraffic modeling. Under future Build with Mitigation conditions this movement operates at (v/c = 1.16) at LOS F with 118.3 seconds of delay. Average queues are reported to now extend back to 145 feet with 95th percentile queues reported at 271 feet based on revised SimTraffic analysis. While the SimTraffic modeling indicates a noted reduction of the potential vehicle queuing along critical off-ramp from I-93 from previously reported values, any increase in traffic to this already failing movement could have a significant compounding effect. Given the close proximity of the I-93 southbound mainline this is a concern not only to the City of Medford but also MassDOT as it may impact regional mobility. 1

The Build condition reported above is also representative of signal timing optimization of this coordinated signal cluster. As indicated in our review of the FEIR these improvements are intended to shift capacity from the east/west movements along Mystic Valley Parkway and Harvard Street to accommodate the increase in demand from traffic exiting I-93 onto the Route 16 Southbound connector. These modifications will significantly deteriorate operations along Mystic Valley Parkway westbound and Harvard Street. Mystic Valley westbound left-turns at Route 38 would

degrade from LOS D to E. Mystic Valley westbound through movements would degrade from LOS E to F with an increase of 20 seconds of delay and result in the demand exceeding capacity along this approach. Most notably Harvard Street, a roadway of particular concern to the City of Medford, would degrade from LOS D to F with an increase of nearly a minute of delay, a volume to capacity ratio that increases from 0.75 to 1.07 and an increase of 240 feet of average queue length and 320 feet of 95th percentile queue length.

In response to this consistent comment raised during the FEIR comment period the proponent stated:

The Proponent has proposed signal timing changes that accommodate the future traffic at this location. The Proponent has committed to perform a Road Safety Audit (RSA) at this location.

At best these signal timing adjustments accommodate the project related traffic exiting I-93 to access the project site to the detriment of the South Medford neighborhood. At worst these improvements are insufficient to accommodate the project impacts resulting in regional mobility concerns to I-93 southbound while still having a significant detrimental effect to South Medford. A Road Safety Audit (RSA), while warranted, will do nothing to address these underlying capacity concerns. It is also unclear how any recommended improvements as a result of the RSA would be implemented. Does the proponent commit to implementing any identified improvement needs as part of this process? 2 3

Given the critical nature of this location to both regional and local mobility it is apparent that more significant, physical geometric improvements are warranted. These improvements should ensure to the satisfaction of MassDOT that I-93 southbound operations will not be impacted by vehicle queues from this location and that City of Medford and Department of Conservation and Recreation (DCR) infrastructure will not be unduly degraded. GPI again recommends that the proponent commit to working with all stakeholders, MassDOT, the City of Medford and DCR, to develop and implement a mitigation plan that appropriately balances regional and local mobility necessities.

Intersection 42 - Wellington Circle

Within the preceding reviews of the Wynn Everett permitting documents, GPI noted insufficient mitigation to address the impact on operations at the Wellington Circle. In recognition of this the Proponent has now committed up to $4 million dollars to invest in geometric improvements, signal optimization ADA, sidewalk and landscaping improvements to the intersection.
Wellington Circle is a location of noted regional congestion which will be greatly exacerbated by the inclusion of project related traffic. It is the opinion of GPI that the benefits of the additional capacity proposed by the proponent to offset these impacts may be overstated as reported in the SFEIR. The additional lanes will be added to an already exceptionally wide roadway cross-section. The utilization and effectiveness of these lanes will be limited by the overall congestion of Wellington Circle and upstream and downstream constraints. In short the analysis presents an idealistic micro-scale analysis where a broader macro-scale solution is warranted. GPI recommended as part of our 4

review of the FEIR that in addition to these improvements the Proponent fund a 25% level grade-separated design for Wellington Circle to be utilized in the future should conditions warrant.

In response to these concerns the Proponent has now committed to funding up to $1.5 million for a long-term study of Wellington Circle. While this is a noted commitment, given the magnitude of the infrastructure needs at this location, this amount will likely be insufficient to fund the complete roadmap needed to plan for the ultimate grade-separated solution, which both the City of Medford and GPI consider to be appropriate. Further it is unclear which entity will oversee and administer the application of these funds given the various jurisdictions and stakeholders involved and when this process will begin. Additional clarification is required. The City of Medford feels strongly that the City should have oversight of this design process to ensure its interests are reflected in a long-term solution. 5

The SFEIR also indicates a VISSIM model was completed for Wellington Circle, however no output data was provided. In order to provide a comprehensive review of this location GPI requests this model be provided. 6

OFF-SITE PARKING

The SFEIR clarifies that the Proponent will lease up to 800 additional parking spaces at three off-site parking facilities to accommodate employees. Of the three proposed parking facility locations, up to 300 additional spaces are proposed within the City of Medford at Station Landing (Wellington Station) with additional spaces proposed within the City of Malden. The SFEIR states the Proponent has confirmed with the operators that sufficient capacity is available at the potential lease locations, though no documentation has been provided regarding the parking at Station Landing. 7

The Proponent has committed to schedule employee shifts at the Project to ensure that no employees need to travel to and from the off-site employee parking locations during the weekday evening peak hours of 4:30 PM - 6:00 PM. As a result of this commitment however, and as noted in our review of the FEIR, no vehicular traffic impacts associated with the employee off-site parking locations were analyzed in the SFEIR. While 4:30 - 6:00 PM may be the critical evening peak period, these roadways experience noted congestion for a much broader period of time. Not understanding the impacts this additional employee traffic may impose on the local roadway network within the City of Medford during these periods potentially masks additional impacts. It is requested that a more thorough analysis of this traffic analysis be presented even if it represents an off-peak condition (6:00 – 7:00 PM or 3:30 - 4:30 PM). At a minimum the expected peak period employee trip generation and distribution should be documented as it relates to the City of Medford. 8

TRAFFIC MONITERING

Within previous reviews GPI commented on the need for a Transportation Monitoring and Reporting program. In the SFEIR this comment has been addressed to provide a post-development transportation monitoring and survey program of employees and patrons. The program is proposed

to commence upon initial occupancy of the Project and would continue for a five year period after full occupancy. The current scope of the traffic monitoring program includes all previously recommended locations suggested by GPI as well as the commitment of having this traffic monitoring program administered by an independent third party.

Still outstanding however is the need to include physical mitigation to offset Project impacts should the need be identified by the traffic monitoring program. As currently proposed the Proponent states that should the results of the traffic monitoring program indicate that measured traffic volumes exceed 110% of projected values or project distribution varies by more than 10% of assumed values the Proponent will undertake corrective measures. These measures however include what GPI would consider "soft" corrective measures, such as signal timing optimization and Transportation Demand Management (TDM) programs. Given the scale of the Project, GPI recommends that more noted physical improvement measures be required if deemed appropriate. 9

CONCLUSION

While the SFEIR provides select additional information and commitments related to concerns raised by GPI in our review of the FEIR, noted concerns still remain. These are most prevalent at the Harvard Street/Mystic Valley Parkway (Route 16)/Mystic Avenue (Route 38)/I-93 Exit 31 Southbound Off-Ramp cluster of intersections where Project impacts could have a significant impact on both local and regional mobility. A more robust mitigation plan is warranted. GPI also asserts that additional detail be provided as to the development of a long-term solution for Wellington Circle. Given the magnitude of this Project, GPI strongly recommends that at a minimum a larger scale, grade-separated improvement plan be developed now so that it may be implemented in a timely manner should the traffic at this key location become untenable in the future, allowing for a proactive rather than reactive plan. Finally the Proponent's traffic monitoring commitment should not preclude additional physical geometric corrective measures in the future should they be warranted. 10 11

Should you have any questions, or require additional information, please contact me directly at (978) 570-2981.

Sincerely,

GREENMAN – PEDERSEN, INC.

Jason DeGray

Jason DeGray, P.E., PTOE
Project Manager

enclosure(s).

Melrose Pedestrian & Bicycle
Advisory Committee

March 25, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St., Suite 900
Boston, MA 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton:

The main thrust of the proposed actions in the SFEIR are to mitigate traffic congestion effects caused by an anticipated increase in the number of users on local roadways, and the principal tool for mitigating those effects seems to be increased road capacity (e.g. adding lanes).

Instead, we ask that a greater emphasis be put on enhancing the safety features of the roads to mitigate the dangers introduced by increased usage, and that congestion be alleviated by improving the infrastructure components that will help diversify mode share (pedestrian access to the T, bike paths, and protected bike lanes). Modern research into traffic congestion mitigation suggests that these methods are both cheaper and more effective and have the *side effect of also mitigating* other negative externalities such as air pollution.

Specific itemized requests for changes are shown below.

1. Extension of the Northern Strand Community Trail

1.1 There should be a strict requirement that construction be performed to extend the Northern Strand Community Trail from its current southern terminus to pass under Route 16 and connect to the site of future paths along the Mystic River, with easy access to the Alford Street (Route 99) bridge and to the site of a proposed ped/bike bridge over the Mystic River. 1

1.2 Optionally, there could be an exemption from future requirements to provide shuttle bus service if path usage reaches a predetermined level.

2. Mystic River Ped/Bike Bridge

2.1 The SFEIR currently mentions a commitment of $250,000 to DCR to fund a study of a ped/bike bridge over the Mystic River. This should be changed to specify the measurable completion of a meaningful task. In particular, we suggest that the required *deliverable* be a 75% design of the ped/bike bridge. 2

3. Sweetser Circle

The design currently suggested for Sweetser Circle includes signage directing cyclists to dismount and walk their bikes on the sidewalk. These directions are unlikely to be followed in practice, and are in conflict with two Massachusetts laws (M.G.L. I.XIV.90E.2A and M.G.L. I.XIV.85.11b). Bicycle accommodations must be made for the full circle, including the bridges that pass over the MBTA train tracks just south of the circle. **Signage directing cyclists to dismount is not an acceptable method for accommodating bicycle traffic.** The following changes should be made: 3

3.1 Lanes and Sharrows

3.1.1 Physically separated cycle tracks or bike lanes with a width of at least 5 feet should be provided on all roadways, including the bridges over the MBTA lines just south of Sweetser Circle. 4

3.1.2 In order to avoid conflict with others entering and exiting the traffic circle, some cyclists will opt to merge with traffic when traveling around a large portion of the circle. Sharrows should be provided **in addition to** cycle tracks or bike lanes, in order to combat the perception that cyclists are restricted to the bike lanes.

3.2 Traffic Calming

3.2.1 The intended speed in the circle, and the speed used for traffic throughput models is 15 MPH (see page 95 of SFEIR Volume I). However, the lanes widths and other design details currently assume a much higher design speed. This is inappropriate and unsafe. The design should include traffic calming measures to encourage travel at the 15 MPH speed used in the *models*. 5

3.2.2 There must be **raised crosswalks** providing connectivity for the sidewalks across all roadways entering and exiting Sweetser Circle.

3.2.3 There should be Rectangular Rapid Flash Beacons triggered by push-button for pedestrians.

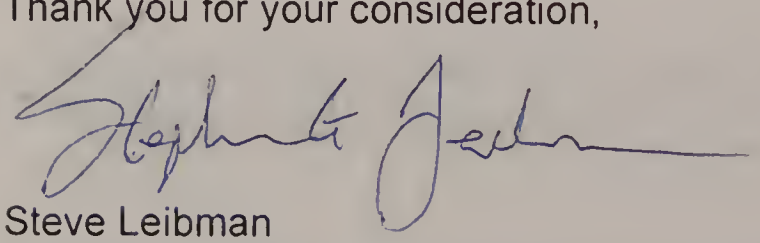
4. Other Roadways Near Sweetser Circle

4.1 We support the current plan to install a counterflow bike lane on West Street between the Northern Strand Trail and Main Street. This is consistent with current usage.

4.2 We would support a plan to close the entrance from Bow Street to Route 99 north (just south of Sweetser Circle), this would require through traffic from Bow Street to execute a 90 degree turn using Bartlett Street. 6

4.3 On Route 99 between the Alford Street Bridge and Sweetser Circle, there are frequent collisions between motor vehicles and pedestrians (source: MassDOT crash data) and between motor vehicles and bicycles (source: observation). In order to combat the increased likelihood of these collisions with increased traffic volume, the bike lanes should be painted solid green at high-conflict intersections, as per the NACTO guidelines that were endorsed by MassDOT in April 2014. Locations should include southbound crossings of Bowdoin Street, retail parking lots, and the revised entrance to the Wynn property, along with northbound crossings of the southwest end of Bow Street, Lynde Street and Thorndike Street. 7

Thank you for your consideration,



Steve Leibman
Chairman, Melrose Pedestrian and Bicycle Advisory Committee

Community Representatives:
Alex Epstein,
Charles Denison Vice Chairman
Ken Carlson, Secretary
Ariel Horowitz
Enid Kumin
Alan Moore
Brian Postlewaite
Tim Talun
Tegin Teich

Ex-Officio:
Chairman Daniel Hadley, Office of the Mayor
Mark Niedergang, Board of Aldermen
Commissioner Stanley Koty, Department of Public Works
Terry Smith, Traffic and Parking
Deputy Chief Michael Cabral, Police Department
Jennifer Molina, Office of Strategic Planning and Community Devt.

March 27, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900
Boston MA 02114
via email to: anne.canaday@state.ma.us

Re: Wynn Casino, Everett MA, EEA 15060

Dear Secretary Beaton:

On behalf of the Somerville Bicycle Advisory Committee, we would like to take this opportunity to **urge you to require Wynn Resorts to fund the design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville** as a condition of receiving MEPA approval of their proposed casino in Everett. Such a bridge would provide the casino with a direct connection to the Orange Line subway station at Assembly Square via a 10-15-minute walk. It would also provide a needed connection between Somerville and Everett, complete the regional path network and be part of the 2,900 mile East Coast Greenway.

The Wynn Resorts project is projected to generate a large number of new automobile trips, further congesting the already crowded highway intersections at Sullivan Square and Wellington Circle. Such congestion will increase commute times for motorists in neighboring Somerville, Charlestown, and Medford, as well as negatively impact MBTA bus services and increase air pollution for already overburdened Environmental Justice communities. While this requested pedestrian and bicycle crossing of the river may not significantly reduce this congestion, it

will offer an alternative travel route to the casino as well as providing compensating benefit to the surrounding neighborhoods, cities and region.

While we understand from the February 17, 2015 Supplemental Final Environmental Impact Report that Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential pedestrian bridge crossing… ", we believe that the crossing should be constructed.

The MBTA Orange Line's new Assembly station is only 1,100 feet from the Wynn development, yet there is currently no way to walk or bike across the Mystic River between Somerville and Everett. **A new pedestrian-bicycle bridge from Somerville's Draw 7 Park to Everett would unlock high-capacity transit access.**

An Alternatives Analysis study of a Mystic River crossing has already been performed, having been commissioned by the Department of Conservation and Recreation in 2009 (please see link: https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0). Therefore the $250,000 should begin where this report ended and included the selection and 75% design of a crossing (not just "an investigation" and be designed for pedestrians and cyclists). This 2009 Report analyzed **at least four designs for a bicycle and pedestrian connection are feasible**, and all of them would cost approximately $6 million, or less than half of one percent of the casino's project cost. For this small mitigation cost, the connection would provide numerous benefits not just for Somerville and Everett but for the entire surrounding region: 1

- Patrons of the Wynn Resorts facility would be less than a 15-minute walk from the Orange Line and the shopping and entertainment district of Assembly Row. **Many of them would not need to drive** to reach downtown Boston, Logan Airport, or other destinations.
- **The bridge would unify both sides of the Mystic River park system:**
  - It would connect Somerville's recently rebuilt Sylvester Baxter Park to the new parks that Wynn plans to build on the Everett riverfront.
  - The Metropolitan Area Planning Council (MAPC) has identified a pedestrian and bicycle crossing in this location as **critical for connecting the regional "LandLine" system of active transportation routes**, including Everett's new Northern Strand (Bike to the Sea) trail, filling a major gap in the regional bicycle network. Just as the Minuteman Trail brings people on bicycle from Arlington and Lexington into Somerville's Davis Square, an extended Northern Strand trail would bring people on bicycle from Everett, Malden, and beyond into Assembly Row and East Somerville.
- A bridge at this location can also provide Orange Line access for the Gateway Center shopping mall in Everett, unlocking the underused surface lots there to be reimagined as higher-density, transit-oriented development.

The Wynn Resorts project presents the Commonwealth with a rare opportunity to improve pedestrian and bicycle transportation in our region. We hope you will not let this opportunity go to waste.

Thank you for your consideration of our request.

Sincerely,

Alex Epstein, Chairman, Somerville Bicycle Advisory Committee

Cc:
Antonio Barletta, Director, Government Affairs, DCR
Michael Glavin, City of Somerville OSPCD
Daniel Hadley, City of Somerville Mayor's Office
Secretary Matthew A. Beaton, EOEA
Commissioner Martin Suuberg, DEP
John Ziemba, Ombudsman Mass Gaming Commission, john.s.ziemba@state.ma.us
jon.lenicheck@mail.house.gov
mary.doherty@mail.house.gov
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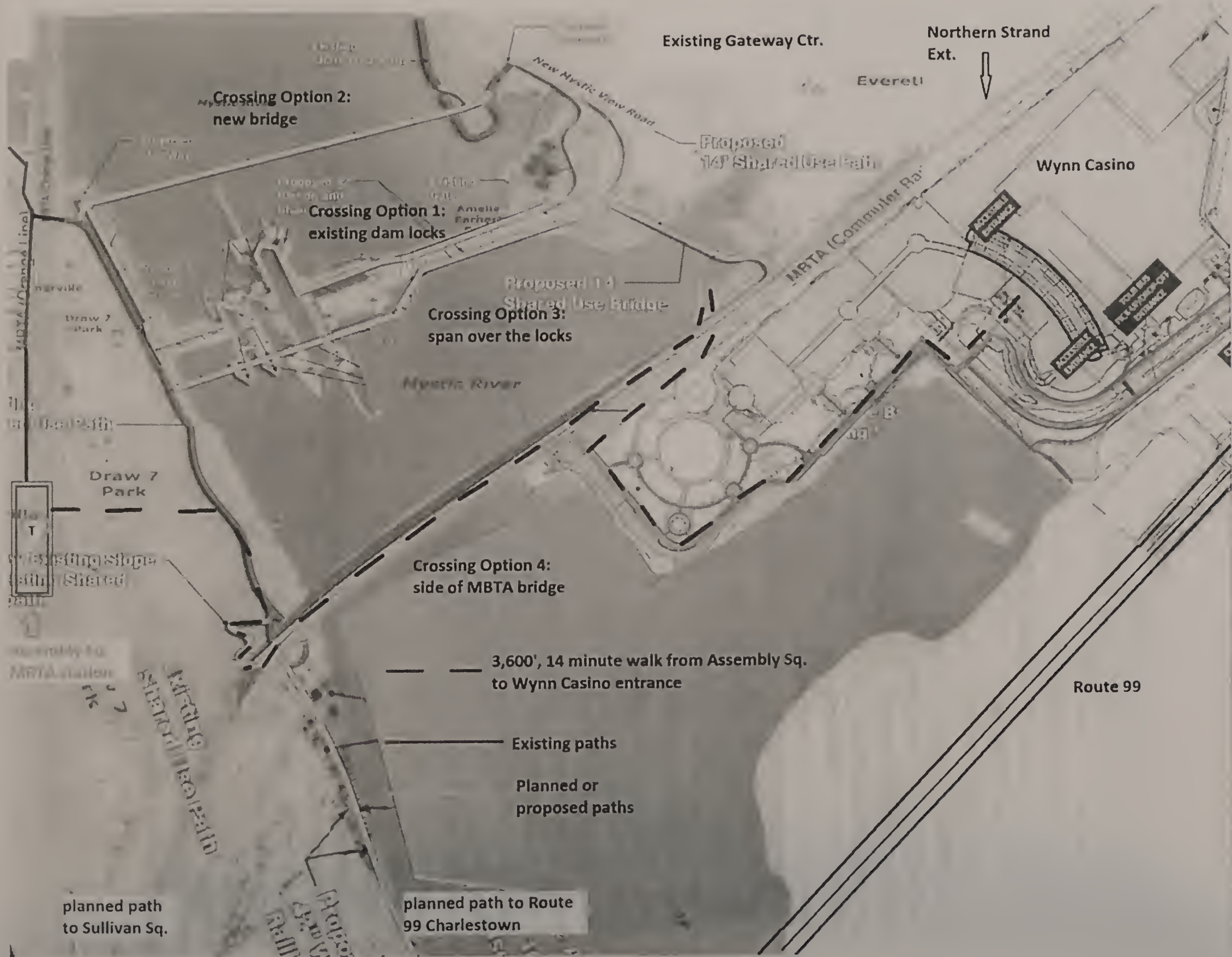
wigzamore@gmail.com
denison@gmail.com
jackie@livablestreets.info
pete@bostoncyclistsunion.org
ehalvorsen@mapc.org
mlevy@somervillecdc.org
andre@ma-smartgrowth.org
rmares@clf.org
wlandman@walkboston.org
friendspath@yahoo.com
dloutzenheiser@mapc.org


Existing Gateway Ctr.
Northern Strand Ext.
Everett
New Mystic View Road
Proposed 14' Shared Use Path
Wynn Casino
Crossing Option 2: new bridge
Crossing Option 1: existing dam locks
Crossing Option 3: span over the locks
MBTA (Commuter Rail)
Mystic River
Draw 7 Park
Crossing Option 4: side of MBTA bridge
3,600', 14 minute walk from Assembly Sq. to Wynn Casino entrance
Route 99
Existing paths
Planned or proposed paths
planned path to Sullivan Sq.
planned path to Route 99 Charlestown

Mystic River Watershed Association
your community • your watershed

March 27, 2015

Matthew A. Beaton, Secretary
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office, Anne Canaday, EEA No. 15060
100 Cambridge Street, Suite 900
Boston MA 02114
Re: EEA 15060, Wynn Everett FEIR

Dear Secretary Beaton:

The Mystic River Watershed Association (MyRWA) appreciates this opportunity to comment on the Supplemental Final Environmental Impact Report EOEEA # 15060 (SFEIR) filed for the proposed Wynn Resort Casino in Everett Massachusetts. This report was submitted to the Secretary February 17, 2015 by Wynn MA, LLC.

The Mystic River Watershed Association is a 501(c)(3) nonprofit organization founded in 1972 by a group of concerned citizens. MyRWA's mission is to protect and restore clean water and the natural environment to a healthy state in the basin's 22 communities and to promote responsible stewardship of our natural resources through educational initiatives. A small organization, MyRWA accomplishes its mission by forging links with citizens' groups, universities, businesses and government agencies. As an environmental organization, MyRWA is particularly attuned to how proposed projects will improve existing conditions within highly urbanized areas of the Mystic River Watershed.

The Mystic River Watershed Association has, throughout the MEPA process, encouraged that, given the scale and scope of the proposed Resort Casino and its location on the banks of the Mystic River, Wynn Resorts and now Wynn MA LLC has an extrordinary opportunity to make a significant contribution to the revitalization of the Mystic River waterfront and to restoration of natural habitat and water quality conditions in the river. We are happy to see, based upon the plans for the development provided to date, that Wynn Resorts has embraced this opportunity.

MyRWA acknowledges and appreciates that the proposed project will accelerate the cleanup of a significantly damaged ecosystem including restoration of a heavily contaminated site with significant waterfront on the main stem of the Mystic River. Such restoration of a keystone parcel in the Mystic River watershed has the potential to make a significant difference to water quality and natural life in the watershed and in the life of watershed communities.

20 Academy Street, Suite 306 · Arlington, MA · 02476-6401 · (781) 316-3438 · www.MysticRiver.org

We hope the proponent will continue to provide innovative leadership to promote restoration of the natural environment and open spaces of the Mystic River watershed. In support of those efforts, MyRWA offers the following comments.

Section 1.2.4 OPEN SPACE

Regarding this section of the SFEIR, the Mystic River Watershed Association recognizes the intent to provide extensive and well maintained open space for public use. We are pleased to see project plans for pathways with connection to other riverfront trail ways as well as a variety of public amenities to be built on and offsite. We agree that project plans to create public space along the waterfront will restore access to the riverfront and can add significantly to the lives of nearby residents and visitors. In addition plans to restore tidelands and to re-create salt marsh habitat will provide an opportunity for healthy outdoor recreation and education that is in short supply in this area.

We are concerned however that ample dedicated parking be created for users of these public areas to ensure that access, as required under Chapter 91, is provided to these kinds of visitors. 1

This class of visitor is not included in the parking analysis nor is it clear in the SFEIR how this issue will be addressed. We recommend that an analysis of the visitor parking issue be completed and, based upon this analysis, a sufficient number of parking spaces be made available at no cost to short term visitors to the site whose purpose is to enjoy the public open space and pathways. This we believe will help fulfill the proponents stated intent "to encourage the public to visit the site and experience the ecological restoration of the project's living shoreline."

We remain in strong support of the proponent's intention to connect the harbor walk on their site with the nearby DCR Gateway Park and hope that this connection through land owned by others can be facilitated.

1.2.6.2 SHORELINE AND SHELLFISH RESTORATION

The Mystic River Watershed Association remains in strong support of plans to "enhance and restore the degraded coastal bank and recreate a salt marsh on the Project Site." We applaud the proponent's efforts to undertake these restorations and encourage all efforts to improve water quality in the Mystic River. Although the clam and oyster seeding activities proposed have been eliminated from the project, the Mystic River Watershed Association looks forward to working with the proponent and other interested parties to advance the restoration of natural resources in the Mystic River and, specifically, aquatic resources in the immediate vicinity of the Project Site.

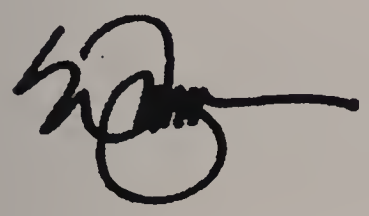
Summary

The Mystic River Watershed Association will continue to monitor the proposed project as it moves forward and will remain in contact with the proponent and relevant authorities during preparation and review of all other Federal, State and local permit applications.

Broadly we are encouraged by the proponent's approach to site remediation, planning and design taken to date and by the stated commitment of the Wynn Resort development team to set high standards of excellence with regard to environmental protection and restoration.

Thank you for this opportunity to comment on this significant project proposal. If you have any questions or require additional information please contact me at (781) 316-3438 or at EK@mysticriver.org

Sincerely,



EkOngKar Singh Khalsa, Executive Director
Mystic River Watershed Association

cc: Jamie Fay, Fort Point Associates
Massachusetts Gaming Commission
Mayor Carlo DeMaria, Jr.
Everett Planning Board
Everett Conservation Commission
Mass Audubon

The Boston Harbor Association
for a clean, alive and accessible Boston Harbor

27 March 2015

Secretary Matthew Beaton
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114
ATT: MEPA Office

RE: EOEA No.15060- Supplemental Final Environmental Impact Report
Wynn Everett, Everett

Dear Secretary Beaton:

The Boston Harbor Association, a non-profit, public interest organization founded in 1973 by the League of Women Voters and the Boston Shipping Association to promote a clean, alive, and accessible Boston Harbor, is in receipt of the Supplemental Final Environmental Impact Report (FEIR) for the Wynn Everett Project. Consistent with the scope outlined in the Secretary's Certificate, information in the Supplemental FEIR is limited to traffic and transportation issues and includes a Response to Comments.

The Boston Harbor Association submitted comments to the MEPA Program on Wynn Everett's Final Environmental Impact Report in August 2014. The project's February 2015 Supplemental Final Environmental Impact Report notes that the design of the project has been modified, with a wider, curved glass 25-story shaft that ranges in height from 343 feet to 386 feet high. Other changes include the addition of 125 hotel rooms and 420 gaming positions; elimination of the entertainment/nightclub; reduction of retail square footage; and elimination of 300 on-site parking spaces.

Representatives of Wynn Everett, the project proponent, briefed The Boston Harbor Association's Harbor Use Committee at its 10 March 2015 meeting on the changes outlined in the Supplemental FEIR and on Chapter 91 related issues. The Boston Harbor Association commends the project proponent for its commitment to developing a LEED Gold, and potentially LEED Platinum, project. As stated in previous comment letters, The Boston Harbor Association is also very supportive of the "Living Shoreline" to be created with the removal of contaminated soils and invasive vegetation. More detailed comments will be submitted by The Boston Harbor Association on the "Living Shoreline" concept during the public comment period for the project's Chapter 91 License later this spring.

Our comments on the Supplemental FEIR follow:

Traffic impacts: The Secretary's 15 August 2014 Certificate on the Final Environmental Impact Report stated, "The majority of comments, whether supportive of the proposed use or not, reiterate the challenge posed by existing congestion of the local and regional roadway system and the additional traffic expected to be generated by the project.

374 Congress Street, Suite 307 ■ Boston, Massachusetts ■ 02210-1807 ■ Telephone (617) 482-1722 ■ Fax (617) 482-9750 ■ www.tbha.org

Specifically, MassDOT, DCR, and the City of Boston have requested a SFEIR to provide additional analysis and information to address traffic and transportation needs" (page 33 of Certificate).

The 15 August 2014 Certificate further stated, "The scope for the FEIR encouraged the Proponent to right-size its parking and identify opportunities for decreasing parking; however, on-site parking has been increased by 791 spaces in conjunction with an increase in gaming positions" (page 15).

The Supplemental FEIR notes, "...the Proponent has eliminated 300 spaces in the Project garage, reducing the total number of spaces in the garage to 3,400. The reevaluations presented in this section evidence the Proponent's commitment to balancing the expectations of Project patrons with the promotion of alternatives to the use of SOVs" (page 2-73). We strongly support the proponent's efforts to promote alternatives to the use of single occupancy vehicles, including the reduction of 300 on-site parking spaces, especially in light of an additional 420 gaming positions proposed in the Supplemental FEIR.

We further support the proponent's coordination with the Massachusetts Port Authority to potentially "share excess parking at two or three of Massport's Logan Express facilities in Braintree, Framingham, and/or Woburn. Massport has indicated that there may be sufficient excess parking at its facilities to accommodate this proposed service" (page 2-74 of Supplemental FEIR). Coordination with entities such as Massport can help reduce redundancy in parking during non-holiday periods while utilizing one of the most efficient "park and ride" systems in the region.

Support for Water Transportation: At TBHA's 10 March 2015 Harbor Use Committee meeting, the proponent again reiterated its strong support for water transportation. The proponent plans to provide frequent passenger water transportation service with headways of 15 minutes between the project site and key Boston Harbor landings. Stops will primarily be in Downtown and South Boston, with expansion as need increases.

Following TBHA's Harbor Use Committee meeting, we received a suggestion that the proponent also consider instituting ferry shuttle service between the dock at the MBTA Assembly station on the Orange Line and the project dock. A five to seven minute boat ride, this proposed connection could reduce and/or eliminate the need for bus shuttle service from Wellington and Malden Center stations on the Orange Line to the project site (an annual $3,285,000 is proposed as part of the mitigation plan to provide patron shuttle service between the two stations to the project site- page 3-19 of Supplemental FEIR). Such a connection could utilize smaller vessels than the customized ferry vessels to and from the Inner Harbor, and help reduce traffic congestion. We urge that the Secretary's Certificate have the proponent consider this alternative as a way to further reduce road congestion. 1

As part of the mitigation measures identified in the Supplemental FEIR, the proponent has agreed to provide dock facilities and customized ferry vessels which can get under

the Alford Street Bridge, and which will run between the project site and key Harbor landing sites. Capital costs is estimated at $8.6 million, with the water transportation system to be ready at project opening (page 3-20 of Supplemental FEIR). We are strongly supportive of this measure.

Related to the above is an additional mitigation measure for an annual operating cost of $3,303,000 per year for operation of the water shuttle service (page 3-19 of Supplemental FEIR). This is an annual operating cost for the life of the Wynn Everett project. As the Baker Administration continues its review of transportation needs for the Greater Boston area, we strongly urge that the fare for the water transportation service be more in line with that of MBTA ferry service, and especially if parking rates are relatively low (no information is provided in the Supplemental FEIR on proposed parking rates). The Supplemental FEIR is not clear with regards to the project's water transportation fares relative to those of the MBTA, nor whether its ridership numbers (6% of visitors coming by water transportation) is based on a fare structure similar to that of the MBTA. 2 3

While we are strongly appreciative of the mitigation subsidies being provided by the proponent, it is not clear whether the annual operating costs for water transportation will be adjusted annually taking into account inflation. Based on 2015 MBTA information about funding needs to maintain a viable transportation system, we ask that the mitigation measure outlined on page 3-19 include the annual $3,303,000 baseline cost plus an annual increase based on the Consumer Price Index. 4

At TBHA's Harbor Use Committee meeting, there was discussion about having a third party, such as the regional planning entity Metropolitan Area Planning Council (MAPC) or other entity, monitor the transportation commitments to ensure compliance with regulatory requirements. Section 2.7 of the Supplemental Final Environmental Impact Report includes elements of a transportation monitoring and survey program, with the monitoring to continue for a period of 10 years. We strongly support the on-going monitoring of transportation commitments by an independent organization, and which will be funded by the proponent, as outlined in the Supplemental Final EIR. 5

Related to this, if the results of the transportation monitoring and reporting program indicate that there are operational deficiencies at the monitored locations and various traffic volume conditions are met, we ask that the corrective measures to be undertaken also include further enhancements to the water transportation system. 6

<u>Pedestrian Access</u>: At TBHA's Harbor Use Committee meeting, there was discussion about the importance of safe pedestrian access to the site. Figure 1-16 of the Supplemental FEIR appears to have the public crossing lanes of roadway to access the front of the building and to access the public rest rooms and retail spaces. Safe access for those walking along the HarborWalk and/or enjoying the public open spaces or coming from the boat dock to the entrance of the building is key. 7

At TBHA's Harbor Use Committee meeting, the proponent indicated that the front entrance will be "striped" for a pedestrian crosswalk, and that staff will be present 24/7 to

help those coming from the water shuttle to cross the roadway to the facility. We ask that these measures by the proponent, together with a requirement for signage indicating a pedestrian crosswalk, be incorporated into the Secretary's Certificate for inclusion in the Chapter 91 License.

We are very supportive of the proposed Gateway Park bicycle and pedestrian connection proposed by the proponent, and believe that it will be an excellent connection to other parts of the existing Department of Conservation and Recreation (DCR)'s Gateway Park. In coordination with the MBTA, DDRC Gateway, and DCR, the new connection will include benches, lighting, bike parking, interpretive signage, overlook areas, and landscaped areas, which will enhance the pedestrian and user experiences.

In addition, we commend the proponent for agreeing to provide $250,000 to the Department of Conservation and Recreation for planning and engineering services related to an investigation of a potential pedestrian/bicycle bridge crossing of the Mystic River linking Somerville and Everett. Hopefully, funding for construction of this crossing will be forthcoming from the project proponent and others following completion of the engineering plans.

Climate change adaptation: As the proponent was preparing its Supplemental Final Environmental Impact Report, the MEPA Program released its draft Climate Change Adaptation and Resiliency Policy in January 2015 for public review and comment.

Consistent with the proposed MEPA Policy and given the extensive scale of development proposed by the proponent, we urge that the Secretary's Certificate have the proponent engage in district planning for sea-level rise. We commend the project proponent for its on-site efforts to make its project climate resilient, and believe that its commitment and expertise in climate preparedness will enhance the overall district planning effort. 8

Thank you for your consideration.

Sincerely,

Vivien Li
President
The Boston Harbor Association

Canaday, Anne (EEA)

From: Elizabeth Levin [lizklevin@gmail.com] on behalf of Liz Levin [liz@lizlevin.com]
Sent: Wednesday, March 25, 2015 12:59 PM
To: Canaday, Anne (EEA)
Cc: Mayor Walsh; Ryan Dan; Pressley Ayanna; LaMattina Salvatore; Cameron, Gayle (MGC); McHugh, James (MGC); Stebbins, Bruce (MGC); Fiandaca Gina; Zuniga, Enrique (MGC); Ziemba, John S (MGC); Pollack, Stephanie (DOT); DePaola, Francis A (MBTA); Draisen Marc; Anthony Gallagher; Gupta Vineet; Keri Pyke; Gordon Chris; Levin Liz
Subject: Wynn Resort SFEIR EEA# 15060 Comments
Attachments: RA-SS Supplemental FEIR March, 2015.doc; ATT00002.htm

Dear Secretary Beaton,

It is my pleasure to submit these comments on the Wynn Resort SFEIR. Thank you very much!

LIZ LEVIN
& COMPANY MANAGEMENT CONSULTING

March 26, 2015

Secretary Matthew Beaton
Executive Office of Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Re: EEA# 15060 Wynn Resort Supplemental FEIR

Attention: MEPA Office/MEPA Reviewer

Dear Secretary Beaton,

I am a Charlestown Resident who lives on Bunker Hill St. near Sullivan Square. For many years my Charlestown neighbors and I have devoted countless volunteer hours to help the City of Boston develop a plan for Rutherford Ave./Sullivan Square (RA/SS Redesign). The RA/SS Redesign improves the traffic flow, makes our community more transit, pedestrian and bicycle friendly and provides for mixed-use development at Sullivan Square. I have also spent countless volunteer hours on the Wynn Casino Proposal (Wynn plan) and its impact on our neighborhood, particularly Sullivan Square. If you have ever gone through the wasteland that Sullivan Square is today you know the importance of our work.

I appreciate that the Wynn plan will create jobs, generate tax revenues, remediate a contaminated site and activate the Mystic River waterfront with open space and development uses.

I also appreciate that the Wynn plan encourages sustainable alternative transportation modes, is based on extensive traffic counts and modeling and includes an "interim" transportation plan that provides for mitigation as a result of their project. Some of that mitigation is a good start to long--term improvements at Sullivan Square. Particularly helpful in that regard will be the changes to Cambridge St., the better bus circulation, the two-way use of the current bus way, the plans for Spice and D Street and the signalization and sidewalk improvements.

The "interim" transportation plan is not, however, the long term transportation solution for this area. It leaves intact the Sullivan Square rotary and the current underpass. The rotary still will be dangerous to enter and exit and the underpass still will be an unsightly relic of the past. Also, the Orange Line may not have the capacity and frequency to provide first class transportation. Thus the "interim plan" will not "fix" Sullivan Square and Rutherford Ave.'s biggest problems. Therefore, the community still will need implementation of the long-term transportation plan for RA/SS to realize the potential of this area. That plan will require City of Boston, MBTA, MassDOT, Mass. Gaming Commission and Wynn co-operation and leadership. I ask in your certificate of approval that you acknowledge that the interim 1

342 Bunker Hill Street 5A, Boston MA 02129 [T] 617 974-5088 [F] 617 542-1347 liz@lizlevin.com www.lizlevin.com

plan is "interim" only and that you consider how best to require that a long term plan be in place to truly meet community goals and to mitigate more fully the Wynn plan impacts.

I also request that you extend the monitoring period for the project to 10 years and require an extremely robust and flexible monitoring program that has opportunity for public input. There is uncertainty about the traffic impacts from the Casino and about regional traffic growth. Having a robust and flexible monitoring program over a ten year period will allow: 1) an annual review of the Casino transportation program; 2) assure that the program is adjusted as needed; and 3) provide transparency and accountability. 2

Today there is lots of interest in the Olympics being held in Boston in 2024. Supposedly all types of transportation improvements may be made at a rapid speed. This optimism about transportation improvements for the Olympics is in stark contrast to the reality that we have seen on Sullivan Square and Rutherford Ave—years of study and no implementation. Please show us in the MEPA Certificate for the Wynn plan that the "interim" plan is just that "interim" and that MEPA will help our community move forward towards implementation of a long-term plan for RA/SS. That for us is our "Olympic Gold".

Thank you for protecting our citizens and the environment.

Sincerely,
Elizabeth K. Levin
Elizabeth Levin

Cc:
Mayor Marty Walsh, City of Boston
State Representative Dan Ryan
City Councilor Ayanna Pressley
City Councilor Sal LaMattina
Stephen Crosby, Chair, MGC
Gayle Cameron, Commissioner, MGC
James McHugh, Commissioner, MGC
Bruce Stebbins, Commissioner,MGC
Enrique Zuniga, Commissioner,MGC
John Ziemba, MGC
Stephanie Pollack, Secretary of Transportation
Frank DePaola, Interim General Manager MBTA
Gina Fiandaca, Commissioner, BTD
Anne Cannady, MEPA
Marc Draisen, MAPC
Anthony Gallager, City of Boston
Vineet Gupta, BTD
Keri Pyke, HSH and Chris Gordon, Dirigo Group

Department of
Civil & Environmental Engineering
Massachusetts Institute of Technology

77 Massachusetts Avenue
Cambridge, MA 02139-4307
Room 1-270
Tel.: (617) 253-5378
email: salvucci@mit.edu

March 20, 2015

Matthew Beaton, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114-5424

Attn: MEPA Office
Everett-Wynn Everett Resort Casino - EEA#15060

Subject: Proposed Wynn Casino in Everett and Boston

Dear Secretary Beaton,

The SEIR submitted by the casino proponent is severely flawed and inadequate, and needs to be substantially revised to properly comply with state environmental law. The flaws include:

1) The document does not include a suitable projection of future traffic conditions generally. The most credible method to produce future projections of traffic and transportation conditions is to use the regional traffic model maintained by the CTPS, a state agency. The casino commission is a state entity and should have access to the CTPS model, to project future conditions to evaluate a range of alternative casino sizes and locations, in terms of their impacts on the natural environment, the Massachusetts economy, and the state budget. This most basic building block for proper compliance with MEPA has not been done. 1

2) The proposed Wynn Everett /Boston location is a particularly sensitive location for a traffic generator as large as the Wynn proposal.

   - I-93 is the primary highway serving the corridor, and is today operating beyond its practical capacity for much of the day, with severe congestion and backups extending well beyond traditional peak hours. Any increase in traffic, either from general growth in the regional economy or additional new traffic generation from a casino will cause disproportionate worsening of the existing bad conditions, extending the severe congestion temporally beyond the traditional peak hours and spatially beyond the specific Location on the Everett/Boston/Somerville border.

   - Automobile traffic will seek to access and egress the site using route 99 to Sullivan Square, to the nearby 3 I-93 ramps to and from I-93 North, and from I -93 from the south. Sullivan Square is notoriously congested today, and causes backup onto I -93 on these three ramps. The existing city and state plans to deal with the deteriorated conditions of the physical infrastructure, including the underpass connecting to Rutherford Avenue will <u>reduce</u> the current capacity by eliminating the underpass, exacerbating the current conditions even at

current traffic levels, and becoming disproportionally worse under the stress of additional traffic feeding through Sullivan Square. Traffic from the site seeking to proceed south to I-93 south bound will attempt to pass through Sullivan Square to Rutherford avenue and eventually pass over the Charlestown Bridge to North Washington Street in the North End to the Haymarket street ramps to I-93 south, and to the Sumner tunnel to Logan Airport, but instead of using the underpasses available today at Sullivan Square and at Community College and the Prison Point Bridge, will be routed through the already congested at grade portions of those problematic locations. Alternatively, southbound traffic may proceed at grade through Sullivan Square to Mystic avenue or Broadway in Somerville in a Northwesterly direction past the newly expanding Assembly Square Mall to attempt to reach the congested southbound ramp from route 28 to I-93 southbound, or use Washington Street westbound to take a left turn at McGrath highway southbound, through the Northpoint development under construction in Cambridge, to the congested Cragie Bridge through Leverett Circle to access I-93 southbound and the Sumner Tunnel to Logan.

- Alternatively, traffic seeking to avoid passing through Sullivan Square at grade may proceed northerly on Route 99 to access the notoriously congested Route 16, to proceed in a northeasterly direction to Route 1 in Saugus or Revere, or to proceed on Route 16 in a westerly direction to Route 28 at Wellington Circle, itself very severely congested today, and very vulnerable to any increase in traffic, particularly for turning movements to and from Route 28 to access McGrath Highway.

- Other major land uses in construction today at Assembly Square Mall, and Northpoint , as well as Kendall Square will themselves be increasing the automobile and truck traffic attempting to use these facilities over the next decade. Moreover, the large land mass in Everett and Chelsea between the Mystic River, Route 99, Route 16, and Route 1, is very likely to be redeveloped at higher density over the next few decades.

The impact upon the already severely congested facilities of a major new traffic generator such as the proposed casino, in a real world context of growth in traffic generation from other major new development now underway can only be understood using the CTPS transportation model. 2

3) This location is also very sensitive for the riders who use the public transportation system.

- The Sullivan Square Orange line and Commuter Rail station, and the associated bus terminal on the Boston/Somerville border is of major importance in relieving the congested auto facilities, and accommodating transportation demand growth which seeks to avoid using the congested auto facilities, but is itself trapped in the congested Sullivan Square conundrum, worsening the already bad current conditions faced by bus riders in the area.

- The MBTA maintenance facilities in Everett are vital regional assets which almost certainly need to expand to meet growing regional needs for bus and rail service. The proposed access road from the proposed casino site to Route 99 needs to be understood in terms of the constraints it will create for existing and future essential MBTA maintenance needs, made more visible in the recent blizzards. The MBTA as a public agency should not make any decision to release any land or permit casino access without itself conducting a rigorous MEPA review, with opportunity for public input prior to decision. 3

The SFEIR looks only at how prospective casino users may use public transportation or their autos to access the site, but not at the public policy question of how the proposed new casino access pressures will affect the delivery of public transportation and roadway service for everyone else. 4

4) Because of the great sensitivity of the transportation network at this location, the choice of alternative scenarios that should be considered in a MEPA process is particularly important and has not been adequate. These alternative scenarios are the responsibility of the Casino Commission which is the public agency with major decision making power which must comply with MEPA. (In addition to the responsibility of the Wynn Proponent.) But the Commission has not carried out its responsibility in this matter in the least. Alternatives which the Commission should seek to define and analyze for the scrutiny and input of the public, and to inform its own ultimate decisions should include:

- The possibility of a casino with no significant parking, and all access by public transportation. The site is immediately adjacent to a passenger rail corridor, and proximate to the Sullivan Square rail and bus terminal, and the Mystic River, which can support boat access. Rather than seeing these public transport access possibilities as supplementary to an auto oriented facility, the casino should be required to consider a zero auto access option that takes advantage of the public transport opportunities, and avoids any worsening of the precarious automobile network in the area. 5

- The possibility of a dramatically smaller facility with less than half of the proposed parking. 6

- The possibility of a different site at Suffolk Downs, or Wonderland. The Suffolk Downs proposal, voted down in the East Boston Referendum, and inappropriately revisited in a slightly different part of the site has been rejected by the commission, without its SFEIR on traffic impact being completed. The possibility of a Wonderland site, which would have been truly within Revere, and at a less vulnerable location than Suffolk Downs or Everett was never analyzed by the Commission. 7

- The possibility of No Eastern Massachusetts major casino, providing the approved Springfield site with essentially an exclusive situation that would be much more robust in the uncertain environment of casino viability. The Springfield site is adjacent to the primary rail lines proposed to be upgraded to provide high speed intercity rail passenger service connecting Boston, Worcester, Springfield, Hartford, New Haven, and New York, offering the possibility of a much less auto oriented accessibility reliance there. 8

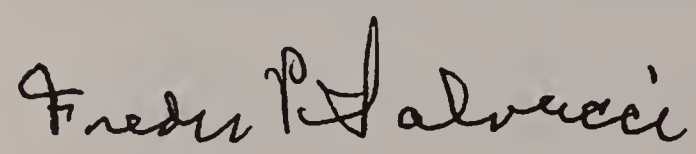
These alternative scenarios are uniquely the responsibility of the casino Commission to propose and consider. They are beyond the realm of what any individual proponent can consider, but they are the way that possibilities can be explored, with public input, of avoiding much or all of the negative transportation impacts otherwise associated with the Everett/Boston site in particular.

What needs to be recognized is that the adverse transportation impacts of the proposed Everett/ Boston site are not mere annoyances. They threaten the economic viability of major economic initiatives underway nearby at Assembly Mall in Somerville, North Point, Kendall Square in Cambridge, and in Charlestown and elsewhere. 9

The adverse transportation impacts do not arise from the location of the roulette wheels and slot machines, but from the location of the parking, and the access and egress routes for that parking which are overwhelmingly in Boston, and also Somerville, and Medford, as well as Everett. Promising to spend money to implement a plan which will <u>reduce</u> the capacity of Sullivan Square in no way "mitigates" the severe adverse consequences of the proposed casino at Sullivan Square in Boston. 10 Proposing to contribute to an unspecified plan to improve the problems at Wellington circle, a severe problem with no known solution, in no way mitigates the adverse impacts that the proposed Everett/ Boston casino would cause. 11

The fundamental fact here is that it is the Commission which has the primary MEPA responsibility, and has utterly failed to carry out that responsibility. The temporary recusal of the chairman because of appearance of conflict just underscores the absurdity of the situation. The commission is not supposed to make basic decisions until after the MEPA process is properly concluded. The commission, with its chairman in recusal decided to approve the Everett/ Boston proposal, notwithstanding the objections of Boston, and notwithstanding the fact that the MEPA review was clearly incomplete. Now there is an after the fact attempt to "comply" with MEPA with a blatantly inadequate document! And the chairman has ended his recusal and resumed the chairmanship.

In summary I urge that MEPA find the SFEIR inadequate, and require the Commission, (not the proponent) to properly analyze and consider at least the alternatives identified above, seek public input based on a complete analysis for the public to review, and decide on an alternative with much less auto reliance and damage to the transportation system and economy of eastern Massachusetts. In the meanwhile, the Commission should rescind its approval of the Wynn proposal which was improperly made prior to completion of the MEPA process. I also believe that it is incumbent on the chair to fully recuse himself from further participation in this entire matter until a thorough MEPA process is completed and proper decision is made.



Frederick P. Salvucci

Senior Lecturer

Civil and Environmental Engineering

Bike to the Sea, Inc.
83 Jacob Street
Malden MA 02148
781-397-6893

Riding for Bike Safety and Safe Places to Ride
Leading Supporter of the Northern Strand
Community Trail

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900 Boston MA 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton:

Bike to the Sea, Inc (B2C) submits these comments on the Wynn Casino Supplmental EIR on behalf of our nearly 200 members and with the support of MassBike, the Somerville Bicycle Committee, WalkBoston, the East Coast Greenway Alliance and others.

Bike to the Sea, Inc. (B2C) has been a leading proponent of bicycling and bicycle safety in the Malden and Everett area since 1993. We have successfully sought improvement for both on and off-road bicycling in and around Everett including the Northern Strand Community Trail, the installation of bicycle lanes and complete streets elements to Lower Broadway and the inclusion of a multi-use path and sidewalk connections from Santilli Circle towards the Amelia Earhart Dam. As former Everett City Councillor Rosie LeCours advised us, "You need to give to get", those efforts included not only seeking bicycle accommodations they also included many clean-ups, bicycle safety fairs and volunteer days to actually build and improve the NSCT in Everett.

All these efforts over the 20 plus years have been focused on the creation of a continuous network of bicycle and pedestrian accommodations in the area north and east of the Mystic River.

We clearly support Wynn's proposal to redevelop a highly contaminated site in the area our members call home. Many aspects of the project will be beneficial to bicyclists and pedestrians traveling to the casino and generally in the area, particularly the new waterfront path along the Mystic River. The project preserves bike lanes on Lower Broadway and through Sullivan Square. Progress has been made on making design improvements since the draft Environmental Impact Report (EIR) such as providing on-site bicycle parking and changing the design at Santilli Highway to avoid creating a flyover that would be detrimental to the bicyclists and pedestrians.

The project and off-site work as described in the supplemental Final EIR does continue to present significant, unmitigated adverse impacts by eliminating existing, critical on-road bicycling connections at Sweetser Circle and increasing traffic volumes that will discourage walking and bicycling in this area. 1

To address the adverse impacts of additional motor vehicle traffic around the project area that will discourage walking and bicycling, Bike to the Sea, Inc. requests that Wynn, the City of Everett, the MBTA and the owners of the Gateway Shopping Center provide firm and defined commitments to design and

build the ½ mile extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets in Everett to the Mystic River within 5 years. We propose inclusion of a Chapter 61 finding requiring funds be committed to the design of this extension and that a 75% design be developed prior to project opening. 2

The proposed design of Sweetser Circle presented in the supplmental FEIR has significant adverse impacts to existing regional on-road bicycling connections. Multiple regional bicycle routes lead into Sweetser Circle and down Lower Broadway to reach the Alford Street bridge, the first and most direct connection to Boston for bicyclists riding to and from Everett and other communities north and east of the Mystic River. The adverse impacts are more fully described in the attached Technical Comment memo. We acknowledge that the project proponent does provide improved accommodations on the northern~2/3 of the Circle, including cycle tracks. Unfortunately, the proposal for the other 1/3 of the Circle removes key travel shoulders used by bicylists to ride to and from Lower Broadway. The proposal shunts bicyclists off the road and calls for bicyclists to walk on the sidewalk. Choking off bicyclists to and from Lower Broadway contradicts requirements of Massachusetts law that allow bicyclists to use the roadways of the Commonwealth, to provide "all reasonable accommodations" for bicyclists and pedestrians and is inconsistent with Department of Conservation and Recreation's core mission and trust over property it holds to provide healthful recreation for citizens of the Commonwealth. B2C's technical memorandum proposes multiple solutions to mitigate the choke point contained in the current design. If lane width design exceptions cannot be secured, mitigation requires the construction of a bridge over the MBTA rail line to accommodate bicyclists traveling north from Lower Broadway. We appreciate the co-operation of Wynn and MA DOT to consider our recommendations though no final resolution at this time. 3

Bike to the Sea, Inc. also supports the development of a multi-use path crossing the Mystic River between Everett and Draw 7 Park in Somerville and appreciates that Wynn plans to provide $250,000 to the DCR to further that effort. Given that DCR previously estimated the cost of a bridge to be $6 million more funds need to be dedicated to complete design and permiting for a crossing. The Mystic Crossing bridge will be much more utilized and provide traffic relief if the Northern Strand Community Trail connects to it. We propose that an Article 61 finding be included requiring Wynn to complete a 75% designs of the Mystic Crossing bridge by the time the Casino opens and to construct the Mystic River Crossing and the Northern Strand connector by 2020 if Wynn's traffic mitigation plan does not meet targets, or if alterations at Sweetser Circle reduce bicycling or increase bicycle and pedestrian crash rates in that area.

Finally, we note that changes to the Wellington MBTA Station appear to eliminate the most convenient bicycle parking at that site. Any bicycling parking impacted at that location needs to be replaced at a location at distance equal to or closer than the parking that is removed. We have observed that the bicycle rack closer to Route 16 was hardly ever used when it was first installed since it was more convenient for bicyclists to simply lock their bikes to the sidewalk handrails blocking ADA access on that sidewalk. 4

We look forward to your reply and careful consideration of these issues we regard as crucial in the support of a strong and sustainable community.

Thanks again. If you have any further questions please feel free to call me at 781-738-2835.

Sincerely yours,

Stephen Winslow,
President, Bike to the Sea

cc: DCR Commissioner Jack Murphy
EOT Secretary Pollack
City of Everett

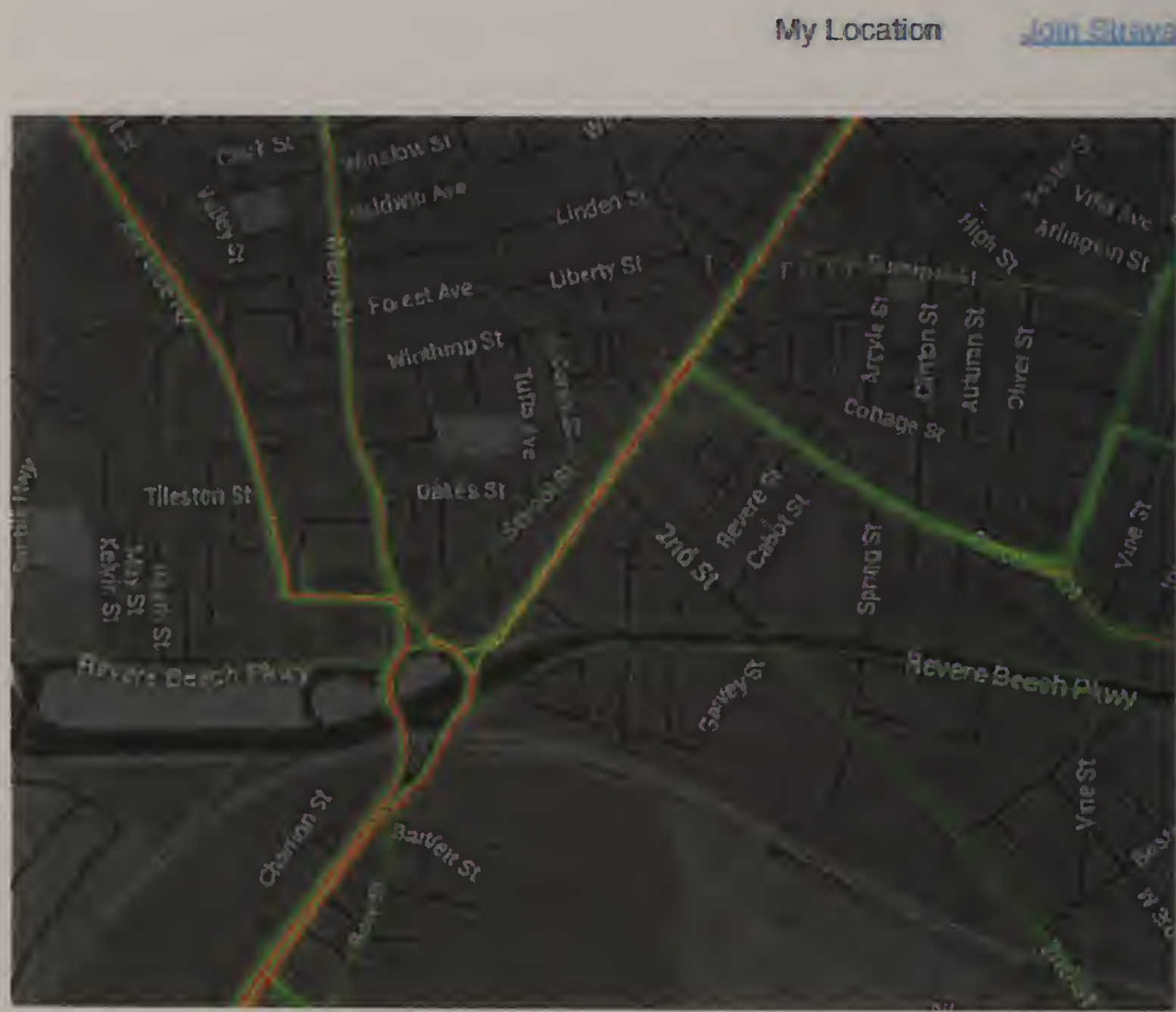
We support the call to extend the Northern Strand Community Trail to and over the Mystic River in the next five years and ask for additional measures to mitigate the adverse impact on continuous bicycling and pedestrian connections at Sweetser Circle that have not been adequately mitigated in the Final Supplemental EIR for the Wynn Casino in Everett

Bike to the Sea, Inc.
WalkBoston
MassBike
Somerville Bike Committee
MassBike
East Coast Greenway Alliance
Friends of Topsfield Trails

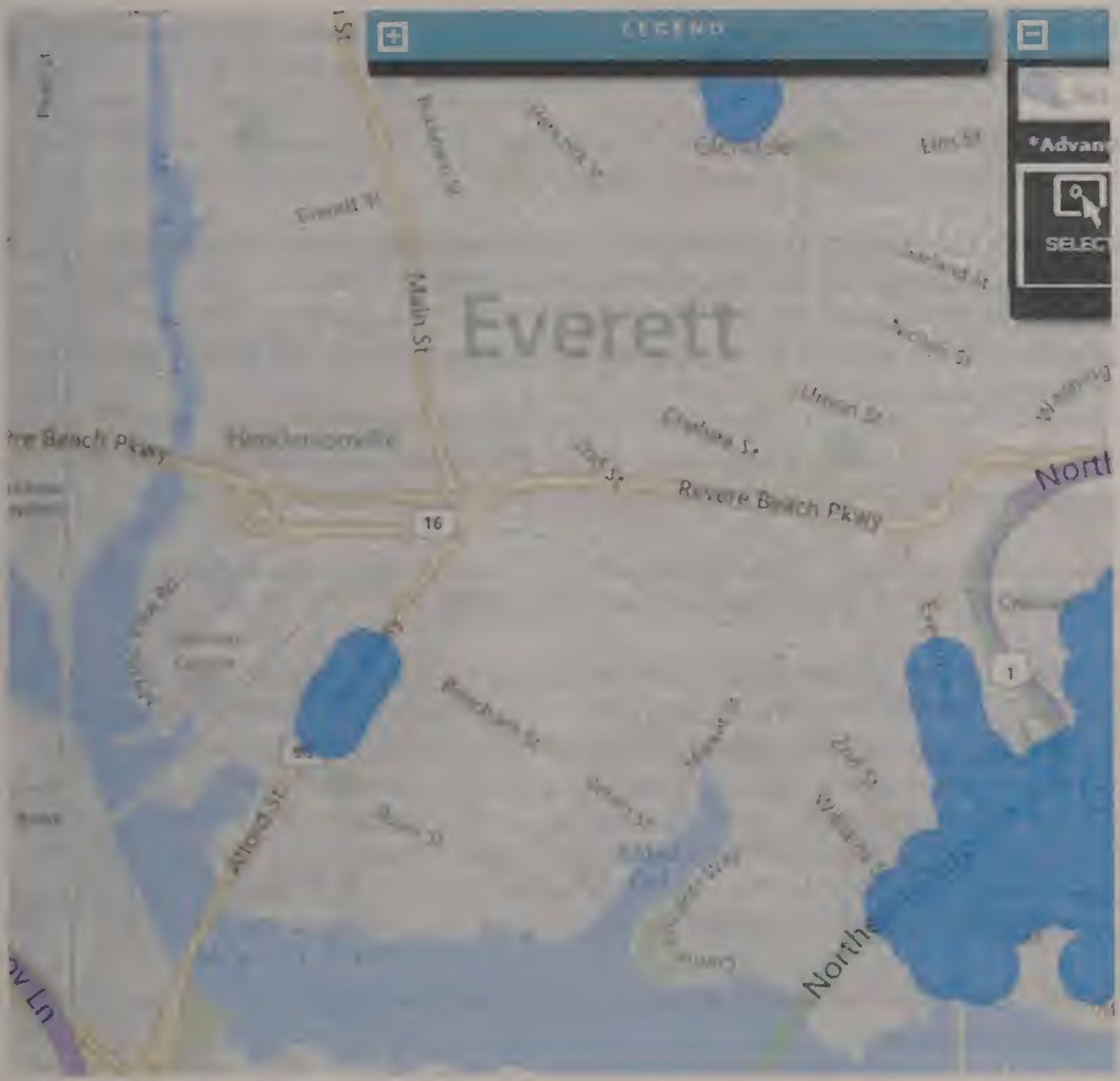
<u>Providing Separate Letters</u>
Mayor Christenson, Malden
Mayor Rizzo, Revere
Mayor Dolan, Melrose

Bike to the Sea technical comments on Sweetser Circle in Supplemental FEIR

Sweetser Circle is where bicyclists converge from the Northern Strand Main St and Broadway to reach lower Broadway. Bicyclists do use this corridor with greater frequency than other streets through Everett as evidenced by the Stravaheat map data. Its also important to note that the Strava method favors wealthier well-connected users and may under report bicycling in Environmental Justice Areas such as the Lynde section of Everett.



Despite perceptions to the contrary, few bicycle crashes have been reported in Sweetser Circle and Broadway in Everett and this area is not the location of a bicycle crash cluster.. (Source Mass DOT, Ped Crash Clusters in Blue, Bike in Yellow)



Technical comments on ped and bike accommodations around Sweetser Circle (Comments begin on Main Street entrance and go counter clockwise)

1. We're supportive of the contraflow bicycle lane on West Street

2. Main St: from West to the 1st Crosswalk – the cycletrack should be 10-feet wide and allow dual flow

3. At the 1st Crosswalk: the crosswalk should be at least 15-wide to the east to allow a dual flow a crosswalk and cycletrack towards Broadway

   ALL CROSSWALKS – ESPECIALLY THOSE CROSSING TWO TRAVEL LANES SHOULD BE RAISED AND HAVE FLASHING BEACONS

   This would not effect traffic flow calculations since those are based on 15 MPH travel speeds through Sweetser Circle

4. From 1st Crosswalk to exit towards Santilli Circle: Cycletrack would be one-way southbound – and should be made six-feet wide by narrowing the travel lanes

5. Between western entrance / exits from Route 16: Prefer to see a raised 6-foot wide cycletrack. Another option would be to have sharrows

6. From western Route 16 entrance to Lower Broadway off-ramp: The lane widths in these approaches and the circle itself are much wider than is needed for a 15 MPH design speed. With raised crossings – speeds will be even more moderated entering the Circle so as to allow narrower lane widths.. Providing for a 11 foot inner lane and a 12-foot outer lane would leave 6-feet raised cycle track for south bound bike traffic. NOTE: encouraging bicycles to ride on the sidewalk on this DOWNHILL stretch would be a dangerous mix for bikes and pedestrians. (Option place sharrows and "Full use of the Lanes" in the right turn lane until bicycle lanes pick up on Broadway)

7. Over MBTA ROW – the shoulders and lanes could be narrowed to 11-feet to allow a raised cycletrack or bicycle lane..

8. Between exit to Rt 99 south and entrance from Route 99: create a 5-foot one-way cycle track that buffers a 5-foot sidewalk..

9. From Rt 99 entrance to Rt 16 east bound exit: the creation of an exclusive right turn lane is the worst part of this design. Bicyclists are having to ride uphill. The best position is to "take a lane" so discourage east bound traffic from "right hooking" a bicyclist. That last thing a bicyclist who has just made the effort to bike up to the ramp wants to do is dismount. They are finally at a location where they can use momentum to ride through the rotary..

The plans list a proposed "bike route" at that location.. but they don't show any transition from the Broadway bicycle lanes. There is no indication of a ramp up to the "proposed bicycle accommodation.

Note while the MUTCD expressly advises against bicycle lanes in rotaries the MUTCD does not restrict bicycle lanes on approaches to and sharrows within the rotary. The MUTCD does not provide anywhere for a design that calls for bicyclists to dismount – there are no regulatory or warning signs that state that… So such as dismount sign and design is INCONSISTENT with the MUTCD and MA State Law.

Two alternates exist:

Consideration should be given to a design waiver to create 10 foot through lanes and 11 foot turning lane.. Eliminating bicycle accommodations in only bad an unlawful. the impact of eliminating bicycling on this route is much more substantial that the impact of narrowing the lanes.

Create a 5-foot wide raised north bound cycletrack next to an 6 to 8-foot sidewalk from the end of the Broadway bicycles lanes around the east side of the Circle over to Main Street. This can be accomplished by either eliminating the right turn lane or by widening the bridge over the MBTA tracks at this location

Again – this would include a raised crosswalk and beacon lights at each crossing area.

10. From the Rt 16 eastbound exit to Broadway: a raised northbound cycletrack should be created. Consideration should be given to making the crosswalk light at the exit from Lower Broadway to Route 16 east more visible (e.g. similar to Grant Circle Rotary on Route 128 in Gloucester).

11. Broadway southbound entrance: a dual flow cycletrack should be created from this entrance to the new cycle track on Main Street – this can be accommodated by narrowing the 12-15 feet travel lanes at this location and adjusting the 8-foot shoulder if necessary.

Other comments: Figure 2-118 Wellington Station: Plans appear to eliminate the most convenient and used bicycle parking. That parking needs to be relocated or replicated either the same distance or more close to the entrance. The old bicycle rack down close to Route 16 was hardly ever used in my 20+ years of observation.. Without closer bicycle racks – people simply lock their bikes to the handrailings – creating ADA access issues.

Santilli Circle / other signalized intersections: not clear from the analysis that sufficient signal timing will be maintained for pedestrian crossings. Count down signals should be used at any signal upgrade. Figure 2-24A. – New wider sidewalk should match the 10-foot width of walk over the Malden River for that bridge reconstruction.

Sullivan Square –

Figure 2-120 – Bicycle routes should have sharrows.

Wynn Resort in Everett
Everett, Massachusetts

Figure 3-25B
Sweetser Circle Conceptual Improvement Plan (80-scale)
Source: Howard/Stein-Hudson Associates, Inc., 2013

6
10
8
7
9
REVERE BEACH PARKWAY
(ROUTE 16)
BROADWAY
(ROUTE 99)
BROADWAY
(ROUTE 99)
BERNARD AVENUE
*ALL LANE WIDTHS ARE 12' UNLESS OTHERWISE NOTED
0
50
100
SCALE IN FEET

Bike to the Sea Proposed Accommodations
10-foot dual direction cycle tracks
5-feet uni-directional cycle tracks
Raised Crossings
5-foot bicycle lanes

Gardens for Charlestown, Inc.
P.O. Box 290044
Charlestown, MA 02129

March 26, 2015

Electronic Delivery
Secretary Matthew A. Beaton
Executive Office of Energy and Environmental Affairs (EOEEA)
Attn: MEPA Office
100 Cambridge St., Suite 900
Boston, MA 02114

Re: Wynn Everett Casino SFEIR, #15060

Dear Secretary Beaton:

Gardens for Charlestown, Inc. (GFC) is submitting comments regarding the Wynn Resort in Everett Supplemental Environmental Impact Report (Wynn SFEIR). We are a volunteer community garden that has been in continuous operation for 38 years, formed by a committed group of Charlestown residents in 1976 for the purpose of promoting community pride and gardening, and to encourage the beautification of Charlestown. The garden is located at the intersection of Main and Bunker Hill Streets in Charlestown adjacent to Sullivan Square.

Based on our review of the Wynn SFEIR, we continue to have concerns about the potential environmental impacts of the project and associated negative health impacts on our community garden and its patrons. We do not believe the Wynn SFEIR presents an accurate estimate of traffic increases in Sullivan Square resulting from their proposed development and does not address the potential impacts of increased vehicular congestion on the sustainability of our community garden. 1

The increase in traffic that will be using the local streets of Charlestown and the Sullivan Square area immediately adjacent to our garden is underestimated. According to the Wynn SFEIR, Chapter 2, Table 2-7, the proponent assumes that 29% of casino patrons will use alternative forms of transportation to access the resort. Based on our discussions with transportation professionals, Wynn's assumptions about future use of the MBTA Orange Line, water transportation, and bus are extremely aggressive. The proponent should have analyzed the effect of a range of transportation mode shares with 29% non-auto use representing the best case scenario. Currently, our gardeners experience long queues of vehicles on Bunker Hill and Main Streets attempting to access Sullivan Sq. at peak times of the day. This condition will only be exacerbated with the new traffic from Wynn casino patrons' vehicles moving through Sullivan Sq. in order to reach the casino. The resulting queues of idling vehicles along the streets which border the garden will result in increased noise and amounts of pollutants emitted into the air and gardeners having difficulty in trying to access the garden. The mitigation measures presented to-date do not address the potential new traffic that will be generated, should the mode share assumptions be overly optimistic. 2 3

Gardens for Charlestown, Inc.
P.O. Box 290044
Charlestown, MA 02129

Gardens for Charlestown is also concerned about the significant amount of contaminated soils that will be transported off the site during the construction of the Wynn project. If these soils are transported over local roads there are potentially significant negative impacts from the release of noxious chemicals into the air and ultimately impacting the soil of the community garden. Many of our gardeners use their garden plots to grow vegetables for their family's consumption. There is the potential for the GFC to become unusable for such purposes due to the impacts of the Wynn project. 4

The GFC is used not only by participating gardeners but by local residents as a urban oasis, a park-like place to relax and enjoy the atmosphere of a healthy green space in the city. The potential noise, pollution, and traffic congestion from increased vehicular activity in the Sullivan Square area will have a significant impact on one of the nicest community gardens in the city and the only open space at the northern end of Charlestown. We urge you to take these concerns under consideration as you review the SFEIR and require the proponent to address these important health and environment issues and thereby commit to effective mitigation measures.

Very truly yours,

Catherine Shanks, President
Gardens for Charlestown, Inc.

Board of Directors: Irene Kochevar, Christine Downing, Deborah McCarthy, David Kenny, Jr., Regina Capozzi, Evelyn Addante, Joseph Murphy, Terry Suganski, Gregory Perkins, Jill Monti

CC: Via Electronic Mail
Martin J. Walsh, Mayor, City of Boston
Sal LaMattina, Boston City Councillor
Stephanie Pollack, Secretary of Transportation
Anne Canaday, MEPA
Gina Fiandaca, BTD Commissioner

Canaday, Anne (EEA)

From: Jeff Dietrich [jeff.dietrich@livablestreets.info]
Sent: Friday, March 27, 2015 4:45 PM
To: Canaday, Anne (EEA)
Cc: Alan Moore; Charlie Denison; Steve Miller
Subject: Comment Letter Re: Wynn Casino, Everett MA, EEA# 15060
Attachments: EEA_15060-LivableStreets-Comment_Letter-3.27.15.pdf

Dear Anne Canaday (or whom it may concern):

Please find attached our comment letter submitted in regards to the Wynn Casino SFEIR, EEA# 15060.

We appreciate the opportunity to submit our comments, and thank you for your consideration.

Sincerely,
LivableStreets Alliance

cc:
Alan Moore
Charlie Denison
Steve Miller

--

Jeff Dietrich | Program Assistant
LivableStreets Alliance
jeff.dietrich@livablestreets.info
(w) 617.621.1746 (c) 508.925.0118
www.livablestreets.info

LivableStreets Rethinking urban transportation

LivableStreets Alliance 70 Pacific St. / @Sidney Cambridge MA 02139 T: 617.621.1746 F: 617.716.2085 info@livablestreets.info livablestreets.info

March 27, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900 Boston MA 02114

Re: Wynn Casino, Everett MA, EEA# 15060

Dear Secretary Beaton:

LivableStreets Alliance is pleased to have the opportunity to submit the following comments on the Supplemental Final Environmental Impact Report on this project:

1. Please require Wynn Resorts to fund a 75% design and permitting of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as a condition of receiving MEPA approval of their proposed casino in Everett. Such a crossing (studied by the DCR in 2009) of the Mystic River would provide the casino with a direct connection to the Orange Line subway station at Assembly Square via a 10-15 minute walk, there eliminating vehicle trips to the casino (which is only 1,100 feet from the station yet, without this crossing, has no connection). This crossing would also provide a needed connection between Somerville and Everett, complete the regional greenway/path network and be part of the 2,900 mile East Coast Greenway. The 75% design should be completed before the casino opens and if the casino's traffic mitigation plans do not meet the established targets, Wynn Resorts should also be required to construct the crossing.

2. To address the adverse impacts of additional motor vehicle traffic around the project area that will discourage walking and bicycling, we request that Wynn, the City of Everett, the MBTA and the owners of the Gateway Shopping Center provide firm and defined commitments to design and build the extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets to the Mystic River within 5 years. We would be supportive if having the Chapter 61 finding require at least a 75% design for this segment be developed prior to project opening.

3. The proposed re-design of Sweetser Circle has significant adverse impacts to existing regional on-road bicycling connections. These regional bicycle routes lead into the Circle and down Lower Broadway to reach the Alford Street bridge are the most direct connection to Boston for bicyclists riding to and from Everett and other communities north and east of the Mystic River. The adverse impacts are more fully described in the March 26, 2015 letter from Bike to the Sea. The design contradicts the requirements of Massachusetts law that allow bicyclists to use the roadways of the Commonwealth, fails to provide "all reasonable accommodations" for bicyclists and pedestrians, and is inconsistent with Department of Conservation and Recreation's core mission and trust over property it holds to provide healthful recreation for citizens of the 1

LivableStreets Rethinking urban transportation

LivableStreets Alliance 70 Pacific St. / @Sidney Cambridge MA 02139 T: 617.621.1746 F: 617.716.2085 info@livablestreets.info livablestreets.info

Commonwealth. Please require Wynn Resorts to work with DCR and MassDOT to alleviate these adverse impacts. If lane width design exceptions cannot be secured, mitigation requires the construction of a bridge over the MBTA rail line 2
to accommodate bicyclists traveling north from Lower Broadway. The redesign of Sweetser Circle should create a continuous network of cycle tracks and bike lanes, connected to the existing bike lanes on Route 99. Directing bicyclists into shared lanes or instructing them to walk on sidewalks is not an acceptable solution. We are happy to provide design guidance and assistance if you would like some ideas of how these improvements could be accomplished.

4. Route 99 and all connecting roads affected by this project should be designed within Complete Streets frameworks. For example, sidewalks shown at 6' wide 3
on Route 99 are inadequate, especially with no parking buffer. Sidewalks along this stretch of road should be a minimum of 8-10 feet wide. In addition, cycletracks should be constructed along Route 99, and the proposed Harborwalk of Wynn Resort should include a bicycle connection through to Route 99.

5. Finally, we note that changes to the Wellington MBTA Station appear to eliminate the most convenient bicycle parking at that site. Any bicycling parking impacted at that location needs to be replaced at a location at distance equal to or 4
closer than the parking that is removed. We have observed that the bicycle rack closer to Route 16 was hardly ever used when it was first installed since it was more convenient for bicyclists to simply lock their bikes to the sidewalk handrails presenting ADA constraints on that sidewalk.

All these requests are reasonable as the Wynn Resorts project is projected to generate a large number of new automobile trips, further congesting the already crowded highway intersections at Sullivan Square and Wellington Circle. Such congestion will increase commute times for motorists in neighboring Somerville, Charlestown, and Medford, as well as negatively impact MBTA bus services and increase air pollution for already overburdened Environmental Justice communities. Implementing these requests will reduce vehicle trips to the casino as well as providing compensating benefit to the surrounding neighborhoods, cities and region.

Thank you for your consideration of these requests.

Sincerely,

Charlie Denison,
Board member, and Chair of the Advocacy Committee, LivableStreets Alliance

Co-signed:

Alan Moore, LivableStreets Advocacy Committee
Steve Miller, LivableStreets Board
Jeff Dietrich, LivableStreets staff & Charlestown resident

Rutherford Avenue/Sullivan Square Advocacy Group
P. O. Box 290535
Charlestown Massachusetts

Matthew A. Beaton, Secretary,
Energy & Environmental Affairs
100 Cambridge Street
Boston, MA 02114

Re: Wynn Everett Casino SFEIR, #15060 March 27th, 2015

Dear Mr. Secretary:

In December of 2013, the Rutherford Avenue/Sullivan Square Advocacy Group formed to strategize optimal ways to protect Charlestown from an (RA/SS)increasingly likely Wynn Everett Casino. That group remained very active throughout the following months, with many members meeting regularly with Wynn management, and testifying before the Massachusetts Gaming Commission.

Since the award to Mr. Wynn on November 6th, 2014, the Group has continued its study and advocacy throughout the past four months, seeking meetings with key players, including BTD and DOT. Our message has consistently been two fold: we are convinced the current configuration of Sullivan Square, including Wynn's promised mitigation, will not accommodate Wynn and regional traffic increases; and planning must begin immediately for a reconfigured Sullivan Square which meets community goals as outlined in the recently concluded BRA SS Disposition Study. Current regional traffic is already heavily congested, with rush hours extending over longer and longer durations. 1

If the Wynn mitigation for Cambridge Street, Maffa Way and Main Streets as projected, it is intended to expedite casino and other traffic off the Rt. 93 ramp, and enhances bus travel to and from Sullivan Square Station. Although impressive, their proposed mitigation, said to be accepted by BTD, fails to address the bottleneck at the Sullivan Square (SS) intersections with Rutherford Avenue and Main Street where two lanes on the traffic circle must accommodate merging very heavy rush hour and casino peak hour traffic. Thus it fails to address the current and future congestion for businesses and residents trying to exit Charlestown. 2

It is not possible to resolve the bottleneck because the SS infrastructure narrows the circle at Rutherford and Main, and forces all traffic for Charlestown, Everett and points northwest through the same two congested traffic lanes. Planning and design work for the new Sullivan Square community must be resumed, and should incorporate Wynn mitigation and traffic projections and include regional traffic increases.

Wynn Everett is targeting a late 2017 opening. Any reconstruction at Sullivan Square is longer term, and planning on a regional basis should be begin immediately. The MEPA

process is a powerful tool to improve development outcomes, and in this instance, the Secretary may make very strong recommendations to state agencies not in the Secretariat's domain. In addition, those agencies within the Secretariat's domain can be required to carry out meaningful requirements. We strongly urge you to make pointed recommendations and strict requirements in your certificate. We are facing coming regional traffic congestion of crisis proportions which will seriously impact Wynn's accessibility and the quality of life, economic growth and prosperity of the surrounding cities and towns.

On February 5, 2015 a presentation of the McGrath Boulevard Project Development was made illustrating the effect on traffic of removing the McCarthy Overpass in conjunction with the RA/SS Redesign. The presentation highlighted the significant increases in traffic in Sullivan Square if both plans were implemented. Surely these findings support the need for a serious and immediate traffic study of the region by the Central Transportation Planning Staff (CTPS), including SS, Wellington Circle, McGrath Highway, Rt. 93, the Gilmore Bridge and adjacent streets. It also necessitates a robust environmental review, which your office can require.

We strongly urge you, therefore, to recommend to DOT and appropriate State and City agencies to begin collaborative work immediately, and require DEP and other Environmental offices to examine the regional study as soon as possible. The casino represents a key event to accelerate serious and effective regional planning.

Sincerely, and with much appreciation for your consideration.

For the Rutherford Avenue/Sullivan Square Advocacy Group
Of Fifty Eight Residents,

Evelyn Addante, Transportation Consultant
Ellen Kitzis, Board, Charlestown Preservation Society
William Lamb, Chair, CPS Design Review Committee
Gerald Robbins, Rutherford Corridor Improvement Coalition
Ivey St John, Rutherford Corridor Improvement Coalition
Annette Tecce, Governor, Friends of City Square Park
Heather Taylor, Board, Charlestown Preservation Society

Cc Thomas Tinlin, Acting Director of Operations
David Mohler, Director of Planning
Gina Fiandaca, BTD Commissioner
James Gillooly, BTD Deputy Commissioner
Martin Walsh, Mayor
Stephanie Pollack, Secretary

Charleston Lofts Condominium Trust
f/b/o/ 210 Broadway and 43 Charlton, Everett
c/o First Realty Management Corp.
151 Tremont Street
Boston, MA 02111

March 19, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

We, the Board of Trustees of the Charleston Lofts Condominium Trust, are writing to you on behalf of the owners of 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause to the residents of our Condominium is a high priority. The possible traffic delays that the casino project will cause entering and exiting our property is of particular concern. Our residents commute to nearby cities including Boston, Everett and Cambridge daily and rely on access to Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). Charlton Street is a dead end road. In the SFEIR plan, these two (2) narrow streets are shown to connect to the new area proposed for the casino access road. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic. Casino, truck, commercial or non-resident traffic cannot be permitted. Large truck traffic serving the residences (i.e., box trucks, delivery or semi-trucks) drive up onto the sidewalk in order to make turns. This causes property damage, blocks access and disrupts the safety of the residents. In order to provide an example of the inadequate existing conditions for trucking, images are attached as Exhibit A. 1

The private property parking lot at the Condominium does not have pedestrian sidewalks. Vehicle traffic is extremely dangerous to residents who must walk in drive aisles in the parking areas to access the MBTA bus stop on Broadway or their parked vehicles. While the drive aisles are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic. 2

Daily MBTA employee shift change traffic impacts Charlton Street and Bowdoin Street. It is our understanding that MBTA employs hundreds of people (i.e. 400+). Moving the MBTA gatehouse closer to

Bowdoin Street, places this significant daily MBTA commercial traffic closer to the Condominium than the gatehouse's original location on Horizon Way. How will this be addressed? Currently, daily shift change traffic using the Charlton Street MBTA access gate, queues up for multiple city blocks in length, causing significant traffic congestion and access problems for our community. Moving the primary gatehouse half-mile closer will make this congestion worse. 3

Recent Beacham Street traffic studies indicate that approximately 10,000 trucks per day use Beacham Street to travel to and from the Chelsea Distribution Center and other industrial facilities. Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway? 4

Green Space: The aesthetic efforts and green space shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. It is disappointing that areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings. Very little landscaping and green space is shown in the plans facing Everett. 5

Stakeholders: The Condominium is located only a few feet away from inclusion for abutter notices. Buildings located at 3 & 9 Charlton Street, recently purchased by Wynn Everett, are about 500 feet away from our site. As stakeholders in the Lower Broadway District, the Board would like to be included on all abutter notices for the casino project. The close proximity to the casino underscores the importance of being informed of progress. 6

Pedestrian, bicycle and ADA compliant access: The Lower Broadway District is currently extremely deficit in providing adequate pedestrian, bicycle and ADA compliant access. In fact, a few years ago, a significant portion of the pedestrian sidewalks along Broadway inbound to Boston, were removed to support bicycle routes into Boston. While the Broadway bike route is of value and highly utilized, this route left sidewalks too narrow and full of obstructions, (e.g., sign poles, light poles, utilities boxes and the like) for pedestrians, in particular, if passing with strollers or wheelchair access. The sidewalks are not well maintained and frequently blocked. Turning traffic (right or left) is incredibly dangerous to pedestrians because the existing traffic is so heavy, turning vehicles proceed too fast without the ability to see pedestrians on sidewalks, behind other vehicles (i.e. trucks, buses). It is a bad combination.

The entire community of Everett would greatly benefit from an unobstructed pedestrian, bicycle and ADA compliant path with access to cross safely above or below casino traffic in order to provide access to the casino resort, to Sullivan Square, Charlestown/Boston, downtown Everett, the Commercial Triangle or Gateway Center. At this time, it is an extremely dangerous undertaking to walk from the Lower Broadway District through Sweetser Circle, to any location along Broadway, or to the Sullivan Square T stop. Increased traffic of any kind will add to the lack of safe access for pedestrians, bicycles and ADA compliant access traffic.

Our Condominium and the Batchyard, which in total, consist of approximately 400 luxury residential units and approximately 800 residents, would like to see the "Bike to the Sea" path extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. It would be ideal to create a walkway similar to the paths in the River's Edge Park, Medford, and in addition, include ambient lighting and safety call boxes that could be used to walk to the resort. Extending this path would create improved access many of the currently difficult areas to access as a pedestrian along Broadway. 7

Crime and Security: We expect that there will be an increased police presence in the Lower Broadway District once the casino is open. We would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. We would like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in our neighborhood. 8

First Responders: First responders, emergency vehicles and personnel need access to the Condominium. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district. 9

Casino service access road: It appears the Condominium property will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street. We do not think this access road should connect to Charlton Street. 10

How will disruption from service traffic, truck impacts (i.e. engine noise, idling odors, loading dock noise, reverse back-up signal beacons, wear and tear from heavy oversized vehicles) be remediated? During construction as well as long term, how will our property be protected from disruption and impacts? Wrong turns by oversized vehicles into the community's narrow entrance(s) blocks traffic access, and cause property damage such as downed light poles, auto damage, landscaping damage or downed bollards. Please refer to the example photos in Exhibit A. During the winter, snow can reduce these two way streets to a single lane. This is dangerous. 11

Will the volume of service traffic on the access road require trucks to queue up and idle? What hours will deliveries occur? What will be the speed at which semi-tractor trailers will be travelling along this service road? How many truck trips are required each day? 12

Will service access road traffic be restricted to protect normal, residential use of Charlton and Bowdoin streets? To be clear, Charlton and Bowdoin Streets are currently at capacity and cannot accommodate traffic that does not pertain to, or support the residences directly. 13

Noise: A noise ordinance may be needed to protect the residential areas of Lower Broadway. The buildings of this property face Broadway. Honking horns, sirens, truck or construction vehicle signal beacons, and use of compression release engine brakes ("jake-brakes") by semi-trucks, has a serious impact to peaceful enjoyment of these homes and affect property value. Are there remediation methods that can be implemented? 14

Storm Water Management: The Condominium recently installed a significant drainage system on its property at site estimated in value of more than $500,000. The complex solution was a team effort between two residential communities and their civil engineers, and resolved decades of flooding problems. Will any new construction impact the investment in this drainage work? Will the public system still be able to accommodate the storm water volume? The board would like to have plans, including storm water calculations provided to our civil engineer for review and comment at such time the plans are presented for consideration and approval to the City of Everett in order to commence construction. 15

Visual Impact: How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? The property has numerous residential units with windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and these homes? 16

All of these impacts will affect residents' quality of life and peaceful enjoyment of their home as well as affect their property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change this community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

The Board of Trustees
Charleston Lofts Condominium Trust

Nancy J. Koury, Trustee

John Spagnoletti, Trustee

Amie J. Kravetz, Trustee

Paul Croft, Trustee

Laurie Picardi, Trustee

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

Exhibit A

Charleston Lofts Condominium Trust
f/b/o/ 210 Broadway and 43 Charlton, Everett

Description: Three (3) images are attached depicting truck congestion. Two (2) trucks are illustrated attempting to use the narrow residential roadway, Charlton Street, Everett, MA. The narrow inadequate street and use by trucks impacts the Condominium by causing oversized trucks to drive too close to the residential building (potential for property damage), up onto pedestrian entrance walkways (safety issue) and landscaping (property damage) in order to access the street.

2015-03-18 16:02:08

2015-03-18 16:02:47

2015-03-18 16:03:15

[redacted]

Steffen and Nancy Koury
210 Broadway Unit A401
Everett MA 02149

By Hand Delivery

March 25, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

Our home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause to the residents of our Condominium is a high priority. We commute to Boston daily and rely on access to Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). Charlton Street is a dead end road. In the SFEIR plan, these two (2) narrow streets are shown to connect to the new area proposed for the casino access road. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic.

The private property parking lot at the Condominium does not have pedestrian sidewalks. Vehicle traffic is extremely dangerous to residents who must walk in drive aisles in the parking areas to access the MBTA bus stop on Broadway or their parked vehicles. While the drive aisles are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic.

Daily MBTA employee shift change traffic impacts Charlton Street and Bowdoin Street. It is our understanding that MBTA employs hundreds of people (i.e. 400+). Moving the MBTA gatehouse closer to Bowdoin Street, places this significant daily MBTA commercial traffic closer to the Condominium than the gatehouse's original location on Horizon Way. How will this be addressed? Keeping this entrance separate from Charlton Street will help to prevent congestion in the residential area.

Recent Beacham Street traffic studies indicate that approximately 10,000 trucks per day use Beacham Street to travel to and from the Chelsea Distribution Center and other industrial facilities. Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway?

Green Space and Visual Impact: The aesthetic efforts and green space shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **It is disappointing that in the current plans, areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings. Very little landscaping and green space is shown in the plans facing Everett.** We hope that the Wynn Everett group will anticipate this important detail for residents, and incorporate more landscaping to soften the casino access road and operations functions that have been located directly next to our homes. The grand entrance is lovely, please apply the same level of attention to detail for the benefit of us who must live with it, and who are not just occasional "guests" to the casino. **The visual impacts for us will be daily and permanent.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? Our home has numerous windows and a roof deck facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and our home?

Construction: We have asked that the Wynn Everett group make arrangements to use their new access road behind the MBTA facility for construction access and debris removal during the demolition of the existing buildings located at 3 & 9 Charlton Street this summer. In December of 2014, our Condominium completed newly renovated landscaping, parking lot, drainage, pavement, curbs and sidewalks along with the neighboring residential property, The Batchyard. **The new roadways (Bowdoin or Charlton Street) should NOT be used for construction vehicles of any kind to prevent damage and premature wear and tear.** This would also affect the safety and access for residents.

Stakeholders: The Condominium is located only a few feet away from inclusion for abutter notices. Buildings located at 3 & 9 Charlton Street, recently purchased by Wynn Everett, are about 500 feet away from our site. As stakeholders in the Lower Broadway District, we would like to be included on all abutter notices for the casino project. The close proximity to the casino underscores the importance of being informed of progress.

Pedestrian, bicycle and ADA compliant access: We would like to see the "Bike to the Sea" path extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development at the Casino so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. It would be ideal to create a walkway similar to the paths in the River's Edge Park, Medford, and in addition, include ambient lighting and safety call boxes that could be used to walk to the resort. Extending this path would create improved access many of the currently difficult areas to access as a pedestrian along Broadway.

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It is an extremely dangerous undertaking to walk from the Lower Broadway District through Sweetser Circle, to any location along Broadway, or to the Sullivan Square T stop. Increased traffic of any kind

will add to the lack of safe access for pedestrians, bicycles and ADA compliant access traffic. Sweetser Circle needs crosswalk signals installed on the western and northern side. **We would like to see the Wynn Everett group create more options related to pedestrians.**

Crime and Security: We expect that there will be an increased police presence in the Lower Broadway District once the casino is open. We would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. We would like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in our neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to the Condominium. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

Casino service access road: It appears the Condominium property will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street. We do not think this access road should connect to Charlton Street.

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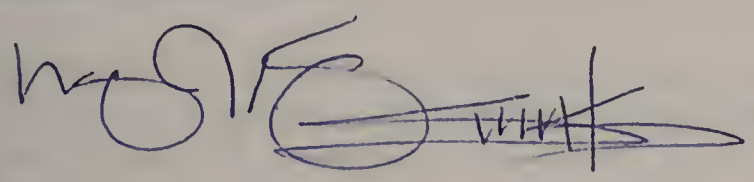
All of these impacts will affect our quality of life and peaceful enjoyment of our home on a daily basis, as well as affect our property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change this community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,



Steffen F. and Nancy J. Koury
Home owners of
210 Broadway, Unit A401
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

New operations building: It appears my home will face the "back-door" casino service access road and a proposed operations building. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road. We do not think this should connect to Charlton Street.

All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Syra Arif
210 Broadway, Apt 403-A
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). Charlton Street is a dead end road. In the SFEIR plan, these two (2) narrow streets are shown to connect to the new area proposed for the casino access road. The streets are residential in their use and support approximately 400 residential units. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic.

Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

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All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Ronald V. Campbell
210 Broadway A-106
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? **How will my home be protected from service access and operations area aesthetics?** My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

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Respectfully submitted,

Teresa Clark, LCSW
210 Broadway #202A
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

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Respectfully submitted,

Paul Croft
210 Broadway #303
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060

Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

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New operations building: It appears my home will face the "back-door" casino service access road and a proposed operations building. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road. We do not think this should connect to Charlton Street.

All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Eric and Melissa Garfield
Owners of 43 Charlton Street Unit B204
Everett MA

Mail: 173 Broadway St, Wakefield, MA 01880

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 25, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Stakeholders: My home is located only a few feet away from inclusion for abutter notices. Buildings located at 3 & 9 Charlton Street, recently purchased by Wynn Everett, are about 500 feet away from my home. As a stakeholder in the Lower Broadway District, I would like to be included on all abutter notices for the casino project. The close proximity to the casino underscores the importance of being informed of progress.

Traffic: Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute to Wilmington, MA daily via 93N and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). These two (2) narrow streets appear to connect to the new area proposed for the casino access road. The streets are residential in their use and support approximately 400 residential units. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic. We would like you to consider establishing a use restriction that would allow these streets to be used only for residential use. Casino, truck, commercial or non-resident traffic cannot be permitted. Large truck traffic serving the residences (i.e., box trucks, delivery or semi-trucks) drive up onto the sidewalk in order to make turns. This causes property damage, blocks access and disrupts the safety of the residents.

The private property parking lot at the Condominium does not have pedestrian sidewalks. Vehicle traffic is extremely dangerous to residents who must walk in drive aisles in the parking areas to access the MBTA bus stop on Broadway or their parked vehicles. While the drive aisles are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic.

Daily MBTA employee shift change traffic impacts Charlton Street and Bowdoin Street. It is my understanding that MBTA employs hundreds of people (i.e. 400+). Moving the MBTA gatehouse closer to Bowdoin Street, places this significant daily MBTA commercial traffic closer to my home than the gatehouse's original location on Horizon Way. How will this be addressed? Currently, daily shift change traffic using the Charlton Street MBTA access gate, queues up for multiple city blocks in length, causing significant traffic congestion and access problems for our community. Moving the primary gatehouse half-mile closer will make this congestion worse.

Recent Beacham Street traffic studies indicate that approximately 10,000 trucks per day use Beacham Street to travel to and from the Chelsea Distribution Center and other industrial facilities. Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway?

Pedestrian, bicycle and ADA compliant access: The Lower Broadway District is currently extremely deficit in providing adequate pedestrian, bicycle and ADA compliant access. In fact, a few years ago, a significant portion of the pedestrian sidewalks along Broadway inbound to Boston, were removed to support bicycle routes into Boston. While the Broadway bike route is of value and highly utilized, this route left sidewalks too narrow and full of obstructions, (e.g., sign poles, light poles, utilities boxes and the like) for pedestrians, in particular, if passing with strollers or wheelchair access. The sidewalks are not well maintained and frequently blocked. Turning traffic (right or left) is incredibly dangerous to pedestrians because the existing traffic is so heavy, turning vehicles proceed too fast without the ability to see pedestrians on sidewalks, behind other vehicles (i.e. trucks, buses). It is a bad combination.

The entire community of Everett would greatly benefit from an unobstructed pedestrian, bicycle and ADA compliant path with access to cross safely above or below casino traffic in order to provide access to the casino resort, to Sullivan Square, Charlestown/Boston, downtown Everett, the Commercial Triangle or Gateway Center. At this time, it is an extremely dangerous undertaking to walk from the Lower Broadway District through Sweetser Circle, to any location along Broadway, or to the Sullivan Square T stop. Increased traffic of any kind will add to the lack of safe access for pedestrians, bicycles and ADA compliant access traffic.

I would like to see the "Bike to the Sea" path (located north of Sweetser Circle) extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. It would be ideal to create a walkway similar to the paths in the River's Edge Park, Medford, and in addition, include ambient lighting and safety call boxes. Extending this path would create improved access many of the currently difficult areas to access as a pedestrian along Broadway.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

Casino service access road: It appears my home will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street.

How will disruption from service traffic, truck impacts (i.e. engine noise, idling odors, loading dock noise, reverse back-up signal beacons, wear and tear from heavy oversized vehicles) be remediated? During construction as well as long term, how will my home be protected from disruption and impacts? Wrong turns by oversized vehicles into my community's narrow entrance(s) blocks traffic access, and cause property damage such as downed light poles, auto damage, landscaping damage or downed bollards. During the winter, snow can reduce these streets to one single lane. This is dangerous.

Will the volume of service traffic on the access road require trucks to queue up and idle? What hours will deliveries occur? What will be the speed at which semi-tractor trailers will be travelling along this service road? How many truck trips are required each day?

Will service access road traffic be restricted to protect normal, residential use of Charlton and Bowdoin streets? To be clear, Charlton and Bowdoin Streets are currently at capacity and cannot accommodate traffic that does not pertain to, or support the residences directly.

Noise: A noise ordinance may be needed to protect the residential areas of Lower Broadway. The buildings where I live, also face Broadway. Honking horns, sirens, truck or construction vehicle signal beacons, and use of compression release engine brakes ("jake-brakes") by semi-trucks, has a serious impact to peaceful enjoyment of my home and affect property value. Are there remediation methods that can be implemented?

Storm Water Management: The Condominium recently installed a significant drainage system on its property at site estimated in value of more than $500,000. The complex solution was a team effort between two residential communities and their civil engineers, and resolved decades of flooding problems. Will any new construction impact the investment in this drainage work? Will the public system still be able to accommodate the storm water volume?

Visual Impact: How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

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for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Christopher C Greci
43 Charlton St, B307
Everett, MA 02149
cgreci@gmail.com

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

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Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

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Respectfully submitted,

Rachel Grubb
43 Charlton St. B408
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

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How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

New operations building: It appears my home will face the "back-door" casino service access road and a proposed operations building. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road. We do not think this should connect to Charlton Street.

All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Tracy Leigh Hanbury
43 Charlton St
Unit B105
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 24, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Stakeholders: My home is located only a few feet away from inclusion for abutter notices. Buildings located at 3 & 9 Charlton Street, recently purchased by Wynn Everett, are about 500 feet away from my home. As a stakeholder in the Lower Broadway District, I would like to be included on all abutter notices for the casino project. The close proximity to the casino underscores the importance of being informed of progress.

Traffic: Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute to Boston daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). These two (2) narrow streets appear to connect to the new area proposed for the casino access road. The streets are residential in their use and support approximately 400 residential units. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic. We would like you to consider establishing a use restriction that would allow these streets to be used only for residential use. Casino, truck, commercial or non-resident traffic cannot be permitted. Large truck traffic serving the residences (i.e., box trucks, delivery or semi-trucks) drive up onto the sidewalk in order to make turns. This causes property damage, blocks access and disrupts the safety of the residents.

The private property parking lot at the Condominium does not have pedestrian sidewalks. Vehicle traffic is extremely dangerous to residents who must walk in drive aisles in the parking areas to access the MBTA bus stop on Broadway or their parked vehicles. While the drive aisles are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights

in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic.

Daily MBTA employee shift change traffic impacts Charlton Street and Bowdoin Street. It is my understanding that MBTA employs hundreds of people (i.e. 400+). Moving the MBTA gatehouse closer to Bowdoin Street, places this significant daily MBTA commercial traffic closer to my home than the gatehouse's original location on Horizon Way. How will this be addressed? Currently, daily shift change traffic using the Charlton Street MBTA access gate, queues up for multiple city blocks in length, causing significant traffic congestion and access problems for our community. Moving the primary gatehouse half-mile closer will make this congestion worse.

Recent Beacham Street traffic studies indicate that approximately 10,000 trucks per day use Beacham Street to travel to and from the Chelsea Distribution Center and other industrial facilities. Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway?

Pedestrian, bicycle and ADA compliant access: The Lower Broadway District is currently extremely deficit in providing adequate pedestrian, bicycle and ADA compliant access. In fact, a few years ago, a significant portion of the pedestrian sidewalks along Broadway inbound to Boston, were removed to support bicycle routes into Boston. While the Broadway bike route is of value and highly utilized, this route left sidewalks too narrow and full of obstructions, (e.g., sign poles, light poles, utilities boxes and the like) for pedestrians, in particular, if passing with strollers or wheelchair access. The sidewalks are not well maintained and frequently blocked. Turning traffic (right or left) is incredibly dangerous to pedestrians because the existing traffic is so heavy, turning vehicles proceed too fast without the ability to see pedestrians on sidewalks, behind other vehicles (i.e. trucks, buses). It is a bad combination.

The entire community of Everett would greatly benefit from an unobstructed pedestrian, bicycle and ADA compliant path with access to cross safely above or below casino traffic in order to provide access to the casino resort, to Sullivan Square, Charlestown/Boston, downtown Everett, the Commercial Triangle or Gateway Center. At this time, it is an extremely dangerous undertaking to walk from the Lower Broadway District through Sweetser Circle, to any location along Broadway, or to the Sullivan Square T stop. Increased traffic of any kind will add to the lack of safe access for pedestrians, bicycles and ADA compliant access traffic.

I would like to see the "Bike to the Sea" path (located north of Sweetser Circle) extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. It would be ideal to create a walkway similar to the paths in the River's Edge Park, Medford, and in addition, include ambient lighting and safety call boxes. Extending this path would create improved access many of the currently difficult areas to access as a pedestrian along Broadway.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. I'd

like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

Casino service access road: It appears my home will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street.

How will disruption from service traffic, truck impacts (i.e. engine noise, idling odors, loading dock noise, reverse back-up signal beacons, wear and tear from heavy oversized vehicles) be remediated? During construction as well as long term, how will my home be protected from disruption and impacts? Wrong turns by oversized vehicles into my community's narrow entrance(s) blocks traffic access, and cause property damage such as downed light poles, auto damage, landscaping damage or downed bollards. During the winter, snow can reduce these streets to one single lane. This is dangerous.

Will the volume of service traffic on the access road require trucks to queue up and idle? What hours will deliveries occur? What will be the speed at which semi-tractor trailers will be travelling along this service road? How many truck trips are required each day?

Will service access road traffic be restricted to protect normal, residential use of Charlton and Bowdoin streets? To be clear, Charlton and Bowdoin Streets are currently at capacity and cannot accommodate traffic that does not pertain to, or support the residences directly.

Noise: A noise ordinance may be needed to protect the residential areas of Lower Broadway. The buildings where I live, also face Broadway. Honking horns, sirens, truck or construction vehicle signal beacons, and use of compression release engine brakes ("jake-brakes") by semi-trucks, has a serious impact to peaceful enjoyment of my home and affect property value. Are there remediation methods that can be implemented?

Storm Water Management: The Condominium recently installed a significant drainage system on its property at site estimated in value of more than $500,000. The complex solution was a team effort between two residential communities and their civil engineers, and resolved decades of flooding problems. Will any new construction impact the investment in this drainage work? Will the public system still be able to accommodate the storm water volume?

Visual Impact: How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Stanley J Heydrick
43 Charlton St., Unit B-206
Everett MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

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Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

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Respectfully submitted,

David McCool
210 Broadway, Unit A-302
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

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All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

TJ McDonough
210 Broadway Unit 404
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

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Respectfully submitted,

Stephen Morin
210 Broadway A406
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
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March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

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Respectfully submitted,

Jeff Mullin
210 Broadway
#103
Everett MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
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March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

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Respectfully submitted,

Mujahid Sait
210 Broadway, Apt 403-A
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
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March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

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How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

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All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Josh Silverstone
210 Broadway #A-206
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

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Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

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Respectfully submitted,

Iva Blazina Vukelja
210 Broadway #A305
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 23, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
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Stakeholders: My home is located only a few feet away from inclusion for abutter notices. Buildings located at 3 & 9 Charlton Street, recently purchased by Wynn Everett, are about 500 feet away from my home. As a stakeholder in the Lower Broadway District, I would like to be included on all abutter notices for the casino project. The close proximity to the casino underscores the importance of being informed of progress.

Traffic: Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute to Boston daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). These two (2) narrow streets appear to connect to the new area proposed for the casino access road. The streets are residential in their use and support approximately 400 residential units. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic. We would like you to consider establishing a use restriction that would allow these streets to be used only for residential use. Casino, truck, commercial or non-resident traffic cannot be permitted. Large truck traffic serving the residences (i.e., box trucks, delivery or semi-trucks) drive up onto the sidewalk in order to make turns. This causes property damage, blocks access and disrupts the safety of the residents.

The private property parking lot at the Condominium does not have pedestrian sidewalks. Vehicle traffic is extremely dangerous to residents who must walk in drive aisles in the parking areas to access the MBTA bus stop on Broadway or their parked vehicles. While the drive aisles are private property, not public roads, they are frequently utilized as "cut-through" access by drivers attempting to cut traffic lights

in order to get to Charlton Street or Bowdoin Street faster. This private property cannot sustain any casino traffic.

Daily MBTA employee shift change traffic impacts Charlton Street and Bowdoin Street. It is my understanding that MBTA employs hundreds of people (i.e. 400+). Moving the MBTA gatehouse closer to Bowdoin Street, places this significant daily MBTA commercial traffic closer to my home than the gatehouse's original location on Horizon Way. How will this be addressed? Currently, daily shift change traffic using the Charlton Street MBTA access gate, queues up for multiple city blocks in length, causing significant traffic congestion and access problems for our community. Moving the primary gatehouse half -mile closer will make this congestion worse.

Recent Beacham Street traffic studies indicate that approximately 10,000 trucks per day use Beacham Street to travel to and from the Chelsea Distribution Center and other industrial facilities. Will there be a specified truck route implemented to better manage the high volume of truck traffic separating this route from Broadway, and reducing the truck traffic, and heavy load wear and tear caused on Broadway?

Pedestrian, bicycle and ADA compliant access: The Lower Broadway District is currently extremely deficit in providing adequate pedestrian, bicycle and ADA compliant access. In fact, a few years ago, a significant portion of the pedestrian sidewalks along Broadway inbound to Boston, were removed to support bicycle routes into Boston. While the Broadway bike route is of value and highly utilized, this route left sidewalks too narrow and full of obstructions, (e.g., sign poles, light poles, utilities boxes and the like) for pedestrians, in particular, if passing with strollers or wheelchair access. The sidewalks are not well maintained and frequently blocked. Turning traffic (right or left) is incredibly dangerous to pedestrians because the existing traffic is so heavy, turning vehicles proceed too fast without the ability to see pedestrians on sidewalks, behind other vehicles (i.e. trucks, buses). It is a bad combination.

The entire community of Everett would greatly benefit from an unobstructed pedestrian, bicycle and ADA compliant path with access to cross safely above or below casino traffic in order to provide access to the casino resort, to Sullivan Square, Charlestown/Boston, downtown Everett, the Commercial Triangle or Gateway Center. At this time, it is an extremely dangerous undertaking to walk from the Lower Broadway District through Sweetser Circle, to any location along Broadway, or to the Sullivan Square T stop. Increased traffic of any kind will add to the lack of safe access for pedestrians, bicycles and ADA compliant access traffic.

I would like to see the "Bike to the Sea" path (located north of Sweetser Circle) extended to the Lower Broadway District and to connect safely to access our residences and then continue to the proposed waterfront development so that residents could walk to the new shops and amenities and enjoy the waterfront parks without running the pedestrian 'gauntlet' along Broadway. It would be ideal to create a walkway similar to the paths in the River's Edge Park, Medford, and in addition, include ambient lighting and safety call boxes. Extending this path would create improved access many of the currently difficult areas to access as a pedestrian along Broadway.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I would also like to see security cameras installed along walkways in the Lower Broadway District with a direct video feed and call boxes to the Everett Police Department. I'd

like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

Casino service access road: It appears my home will face the "back-door" casino service access road as well as a new operations building. This access road appears connected to Charlton Street. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road, and in particular, specific to Charlton Street.

How will disruption from service traffic, truck impacts (i.e. engine noise, idling odors, loading dock noise, reverse back-up signal beacons, wear and tear from heavy oversized vehicles) be remediated? During construction as well as long term, how will my home be protected from disruption and impacts? Wrong turns by oversized vehicles into my community's narrow entrance(s) blocks traffic access, and cause property damage such as downed light poles, auto damage, landscaping damage or downed bollards. During the winter, snow can reduce these streets to one single lane. This is dangerous.

Will the volume of service traffic on the access road require trucks to queue up and idle? What hours will deliveries occur? What will be the speed at which semi-tractor trailers will be travelling along this service road? How many truck trips are required each day?

Will service access road traffic be restricted to protect normal, residential use of Charlton and Bowdoin streets? To be clear, Charlton and Bowdoin Streets are currently at capacity and cannot accommodate traffic that does not pertain to, or support the residences directly.

Noise: A noise ordinance may be needed to protect the residential areas of Lower Broadway. The buildings where I live, also face Broadway. Honking horns, sirens, truck or construction vehicle signal beacons, and use of compression release engine brakes ("jake-brakes") by semi-trucks, has a serious impact to peaceful enjoyment of my home and affect property value. Are there remediation methods that can be implemented?

Storm Water Management: The Condominium recently installed a significant drainage system on its property at site estimated in value of more than $500,000. The complex solution was a team effort between two residential communities and their civil engineers, and resolved decades of flooding problems. Will any new construction impact the investment in this drainage work? Will the public system still be able to accommodate the storm water volume?

Visual Impact: How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

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Respectfully submitted,

Jeanine Woodford
210 Broadway Unit 203
Everett Ma 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov

March 27, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

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Respectfully submitted,

Matthew Rich
43 Charlton Street
Building B -102
Everett MA, 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

RE: EOEEA #15060
Comments on Wynn Everett, SFEIR dated February 17, 2015

Dear Mr. Beaton,

My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 43 Charlton Street Unit B509 in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

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Respectfully submitted,

Alexander A. Colarusso, Owner
43 Charlton St. B509
Everett MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

March 26, 2015

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Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

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Respectfully submitted,

Emily & Mark Stoehrer
210 Broadway A108
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

RECEIVED
APR 2 2015

March 27, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office/MEPA Reviewer
100 Cambridge Street, Suite 900 (9th Floor)
Boston, MA 02114

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Respectfully submitted,

Neil Allwood
210 Broadway, Unit A201
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

RECEIVED
APR 2 2015

March 27, 2015

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My home is located within the 69-unit residential condominiums, the Charleston Lofts, located at 210 Broadway/43 Charlton Street in Everett (the "Condominium"). The closest intersection to the Condominium is Bowdoin St. and Broadway (RTE 99). This property is about 500 feet north of the northern edge casino development and south of the RTE 16 rotary, known as the Lower Broadway District. It is one of the last residential properties on RTE 99 before RTE16.

Traffic: Charlton Street should not be connected to the casino access road. Charlton Street should remain as it is today, a dead end road.

Traffic disruptions that the Wynn casino may cause near my home is a high priority. The possible traffic delays that the casino project will cause entering and exiting my property is of particular concern. I commute daily and rely on access to travel on Broadway. There is no alternative street to access the Condominium except Broadway.

The entrance to the Condominium is located at Bowdoin St. and Charlton St. (off of Broadway). Charlton Street is a dead end road. In the SFEIR plan, these two (2) narrow streets are shown to connect to the new area proposed for the casino access road. The streets are residential in their use and support approximately 400 residential units. These streets currently are at their traffic capacity and are inadequate for any additional use, especially commercial traffic.

Visual Impact: The aesthetic efforts shown in the SEIFR plans focused primarily on the Boston facing entrance - which appears to be well done and quite stunning. **Areas facing Everett appear to be adding more cement; asphalt and "back door" scenes, operation buildings.**

How will the "back-door" aesthetics of the casino be handled? How will my home be protected from service access and operations area aesthetics? My home has windows, roof decks and balconies facing the back of the casino site. Will there be a substantial buffer screening the view between this service road and my home?

Pedestrian, bicycle and ADA compliant access: We would like to see improved Pedestrian and bicycle access in the district. The plan does not demonstrate an improvement.

Crime and Security: I expect that there will be an increased police presence in the Lower Broadway District once the casino is open. I'd like to be kept apprised of what additional steps that Wynn Everett will take to ensure that there are no increased crime issues related to the casino in my neighborhood.

First Responders: First responders, emergency vehicles and personnel need access to my home. Traffic delays could mean life or death for residents in the case of a fire or medical emergency. We request and support the addition of a police and fire substation in this district.

New operations building: It appears my home will face the "back-door" casino service access road and a proposed operations building. Please provide details pertaining to this new building and its use. Please provide details to the expected use of the access road. We do not think this should connect to Charlton Street.

All of these impacts will affect my quality of life and peaceful enjoyment of my home as well as affect my property values. While it is anticipated that there will be positive change along Broadway, there will be new impacts. The casino should not negatively impact the positive change my community has worked to achieve in the neighborhood in any way or prohibit the use of these properties as residential and practical for commuting to Boston as is their current use. Please make sure there will be no negative impacts to me, the Condominium and the abutting residences, The Batchyard, or the City of Everett.

Respectfully submitted,

Tea Huot
210 Broadway, Unit A201
Everett, MA 02149

Cc: City of Everett Planning Dept.
Tony.Sousa@ci.everett.ma.us;
Jamie.Errickson@ci.everett.ma.us
State Representative, Joseph W. McGonagle, Jr., Joseph.McGonagle@mahouse.gov
Senator Sal DiDomenico, Sal.DiDomenico@masenate.gov

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Matthew A. Beaton, Secretary,
Energy & Environmental Affairs
100 Cambridge Street
Boston, MA 02114

Re: Wynn Everett Casino SFEIR, #15060 March 27th, 2015

Dear Mr. Secretary:

In regards to the awarded Wynn Casino in Everett, we remain concerned about several aspects of the project that directly affect Charlestown: The environmental effects of the remediation, the social issues associated with a casino and most concerning - the amount of traffic and likely isolation of Charlestown as a result of the project. We are convinced that the current configuration of Sullivan Square, including Wynn's promised mitigation, will not accommodate Wynn and regional traffic increases. Current regional traffic is already heavily congested, as there are very few avenues in and out of Charlestown.

The Wynn mitigation for Cambridge Street, Maffa Way and Main Streets proposes to expedite Wynn traffic into Sullivan Square from the Rt. 93 off-ramp, and to enhance bus traffic to and from Sullivan Square Station. That mitigation, which we understand may have been accepted by BTD, fails to address the bottleneck at the Sullivan Square (SS) intersections with Rutherford Avenue (RA) and Main Street where there is already a gridlocked rush hour, without the addition of casino peak hour traffic. This is a major problem that will completely cripple access in and out of Charlestown. 1

It is not possible to resolve the bottleneck while the current infrastructure is in place. The combined infrastructure of SS and RA prevents any significant reconfiguration of traffic patterns, and forces all traffic for Charlestown, Everett and points northwest through the same congested traffic lanes. Planning for the Sullivan Square must be resumed, and should incorporate Wynn, and regional traffic projections. In that planning, we strongly encourage consideration of providing access to Wynn Everett via an off-ramp from Rt. 93 in Everett, rather than through Sullivan Square and Charlestown or an on-ramp from Charlestown to 93 North (which is already partially created). 2

Wynn Everett is targeting a late 2017 opening. Any reconstruction at Sullivan Square is longer term, and the planning must be resumed immediately to accommodate the imminent addition of the Wynn Casino to our traffic landscape. We strongly urge you to require DOT and appropriate State and City agencies to begin collaborative work promptly.

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Sincerely, and with much appreciation for your consideration.

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March 24, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900 Boston MA 02114

Re: Wynn Casino, Everett MA, EEA 15060

Dear Mr. Beaton:

The East Coast Greenway Alliance (ECGA) submits the following comments on the Wynn Casino Supplemental EIR.

The ECGA is spearheading the development of a 2,900 mile multi-use trail connecting cities along the Eastern Seaboard from the Canadian border to Key West, Florida. Since 1991, the ECGA has worked with public agencies, elected officials, grassroots organizations and volunteers to develop the nation's most ambitious long-distance urban trail. By knitting together existing and future trails, the ECG network is now 30% off-road and/or physically separated from motor vehicles. At its heart the ECG is a touring route but as the ECG has expanded so has the level of safety, health, equity, and economic vitality of these communities.

We are delighted to read that Wynn Resorts is committed to mitigating motor vehicle traffic in and around the proposed site in Everett. However, in order to make a true impact, we believe Wynn's resources should be invested in increasing mode share by accommodating the growing need for active transportation facilities. To accomplish this, Wynn should commit to closing the gap from the Northern Strand Community Trail to Somerville.

The ECGA requests that Wynn, the City of Everett, the MBTA and the owners of the Gateway Shopping Center provide firm and defined commitments to design and build the half mile extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets in Everett to the Mystic River within 5 years. We propose inclusion of a Chapter 61 finding requiring that at least $200,000 be committed to the design of this extension and that a 75% design be developed prior to project opening.

The ECGA also supports the development of a multi-use path crossing the Mystic River between Everett and Draw 7 Park in Somerville and appreciates that Wynn plans to provide $250,000 to the DCR to further that effort. Given that DCR previously estimated the cost of a bridge to be $6 million at least another $550,000 should be committed to complete design and permitting. The Mystic Crossing bridge will be much more utilized

LINKING COMMUNITIES FROM MAINE TO FLORIDA 5315 Highgate Dr. Suite 105, Durham, NC 27713 | 919-797-0619 | info@greenway.org | www.greenway.org

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March 24, 2015

and provide traffic relief by completing the connection to the Northern Strand Community Trail. We propose that an Article 61 finding be included that requires the construction of the Mystic River Crossing and the Northern Strand connector by 2020 if Wynn's traffic mitigation plan does not meet targets.

The ECGA hopes you will consider these issues as you move forward with the project. We welcome any opportunity to discuss these comments. If you have any further questions please contact Molly Henry at molly@greenway.org

Sincerely,

David Read

David Read

East Coast Greenway Alliance, Board Chair, Topsfield, MA

Molly Henry

Molly Henry

East Coast Greenway Alliance, New England Trail Coordinator

cc: DCR Commissioner Jack Murphy

EOT Secretary Pollack

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Executive Director
Dennis McNamara-Sullivan

Canaday, Anne (EEA)

From: Grafmeyer, James [JGrafmeyer@ddr.com]
Sent: Friday, March 27, 2015 11:31 AM
To: Canaday, Anne (EEA)
Cc: Erb, Chris; Farrell, James; Owendoff, Michael
Subject: Wynn Everett SFEIR - Everett, MA --EEA No. 15060
Attachments: SFEIR --Wynn---Letter to MEPA--3-27-15.pdf

Importance: High

Dear Ms. Canaday, I am responding to you with respect to the filing of the Supplemental Final Environmental Impact Report (SFEIR) by Wynn MA, LLC for their proposed casino project. As you probably know from our previous correspondence with you, we are the owner of Gateway Center, a 640,000 square foot shopping center off of Mystic View Road. I have attached a letter that specifically addresses the SFEIR's proposed traffic mitigation plan. We have had discussions with the Wynn team since the SFEIR was filed, however, based on timing, they have not been able to address our traffic issues and concerns as outlined in our letter.

We trust that MEPA will take into serious consideration our concerns. If you have any questions, please feel free to call me at 216-755-5880. Also, if you could email me back confirming that you received this email, I would appreciate it.

Thanks.

Jim Grafmeyer
Vice President of Development

DDR Corp.
3300 Enterprise Parkway
Beachwood, Ohio 44122
P: 216.755.5880 // F: 216.755.1880 // M: 216.577.3320
W: ddr.com // NYSE: DDR

Twitter // LinkedIn // Facebook

March 27, 2015

Via Email: Anne.Canaday@state.ma.us

Executive Office of Energy and Environmental Affairs
100 Cambridge Street
Suite 900
Boston, MA 02114

Attn: MEPA Office – Ms. Anne Canaday

Dear Ms. Canaday,

This letter is a result of the recent submittal of the *Wynn Everett Supplemental Final Environmental Impact Report (SFEIR)* for the proposed casino and resort project to be located on Horizon Way off Lower Broadway (Route 99) in Everett, Massachusetts. DDR and our traffic engineer, VHB, have taken a substantial amount of time to review the SFEIR. Our review was limited to and focused on the traffic operational impact of the Wynn Everett project on Mystic View Road and the site driveway to Gateway Center, a DDR Corp. shopping center property. It is important to note that the intersection of Mystic View Road and Gateway Center was not evaluated in the SFEIR; however, the intersection of Mystic View Road with Santilli Circle located adjacent to the site was evaluated. This letter addresses the following:

- An overview of the changes in the Wynn Everett project since the publication of the FEIR on June 30, 2014.
- A description of the modifications to the proposed off-site roadway improvements affecting Mystic View Road and Santilli Circle, and the anticipated traffic operations associated with the Wynn Everett mitigation plan.
- Recommendations by DDR for additional study/analysis to ensure that the mitigation approved for the Wynn Everett project has no negative impact on traffic operations at the access to Gateway Center.

In addition, it should be noted that VHB and DDR met with the City of Everett Mayor, City staff members, and representatives from the Wynn team on March 4, 2015. During that meeting VHB further explained concerns relative to the project's mitigation plan and its impact on traffic operations abutting Gateway Center as presented in the SFEIR (VHB had previously emailed the concerns to the Wynn team and followed up with a phone conversation to discuss the items in advance of the meeting with the City). The Wynn team understood the concerns and planned to address them through a revised mitigation plan. The goal of the Wynn team was to submit revised traffic analyses for the updated mitigation plan by Friday, March 13, 2015, which would give VHB and DDR 2 weeks to review prior to the March 27, 2015 MEPA deadline for comments. It was the hope of all parties that the DDR letter to MEPA would reference the updated mitigation plan (developed post SFEIR) and their support of the plan, instead of commenting on the issues raised in the SFEIR. Unfortunately, at the time this letter was prepared, the Wynn team was not able to provide an updated mitigation plan or supporting analyses, so our comments address only the material presented in the SFEIR. We acknowledge that the Wynn team is in the process of updating their proposed mitigation and we will work together with them to hopefully arrive at a solution that is acceptable to all the parties. 1

WYNN EVERETT PROJECT MODIFICATIONS

Since the completion of the FEIR, the casino development program has undergone several modifications. In general, the number of hotel rooms and gaming positions has increased, while the retail space has been reduced and the night club eliminated. Table 2-1 from the SFEIR, *Comparison of Project Evaluated in the FEIR and as Refined and Evaluated in the SFEIR*, is presented below to summarize the adjustments for each component.

Table 2-1: Comparison of Project Evaluated in the FEIR and as Refined and Evaluated in the SFEIR

Land Use Component[1]	As Evaluated in FEIR	As Refined and Evaluated in SFEIR	Difference
Hotel	504 rooms	629 rooms	+125 rooms
Nightclub	25,341 sf	0 sf	-25,341 sf
Retail	96,172 sf	79,455 sf	-16,717 sf
Gaming	4,160 positions	4,580 positions	+420 positions

1) These components are the primary land uses affecting the trip generation analysis. Other elements of the Project (such as spa/gym facilities, restaurants, and conference spaces) generate internal trips and are accounted for in these primary categories

The SFEIR proposes a slightly lower trip generation than previously reported in the FEIR by approximately 61 trips during the Friday evening peak hour and 143 trips during the Saturday afternoon peak hour. Table 1 provides a comparison of the updated trip generation shown in the SFEIR to the levels previously published in the FEIR.

TABLE 1

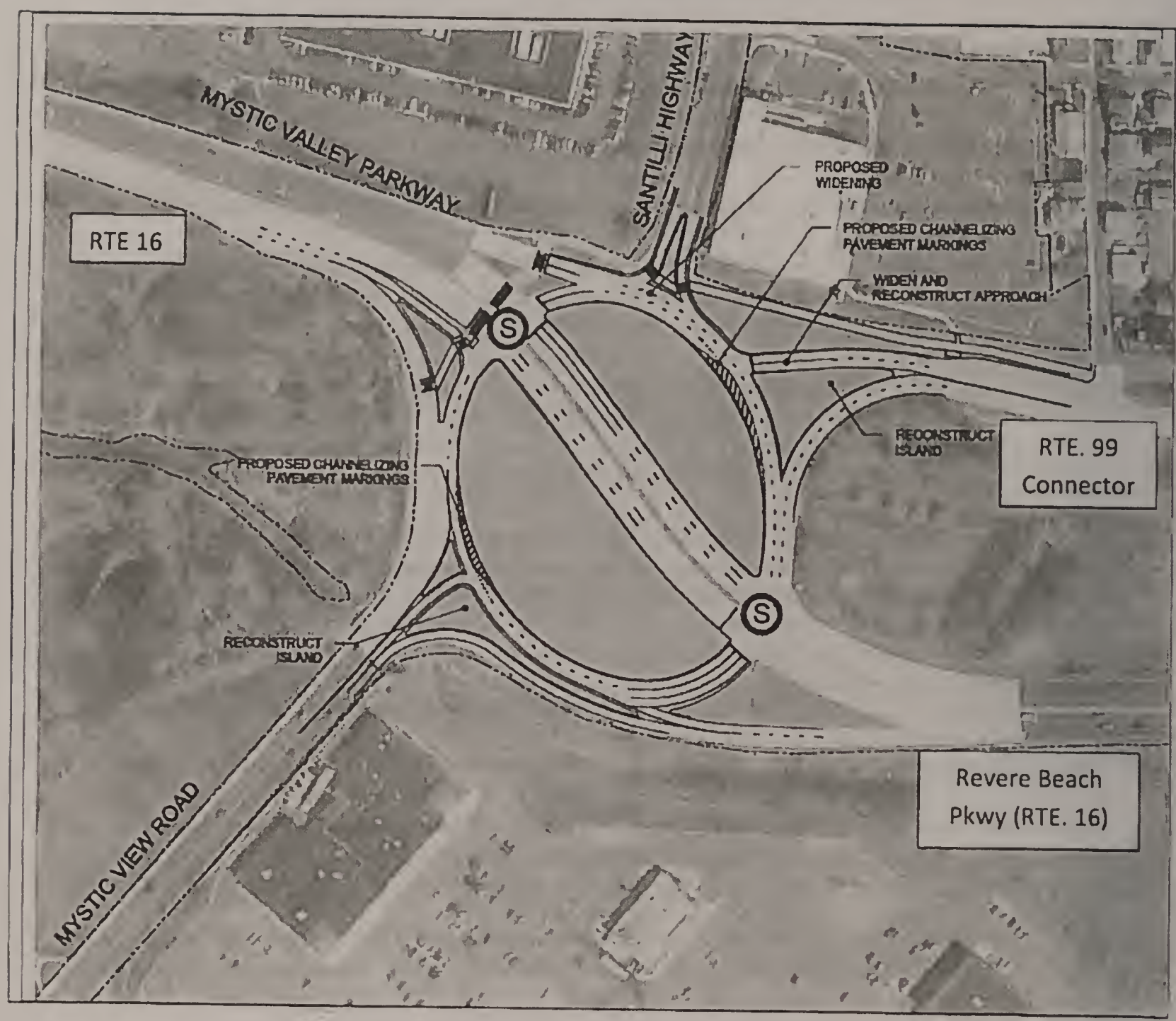
TRIP GENERATION UPDATE

	Friday Evening		Saturday Afternoon	
Uses	FEIR	SFEIR	FEIR	SFEIR
Hotel	65	82	85	105
Night Club	143	0	244	0
Retail	202	172	467	413
Gaming	975	1,072	1,119	1,232
Shuttles/Buses	34	26	38	60
Total	1,419	1,358	1,953	1,810

PROPOSED OFF-SITE IMPROVEMENTS

The proposed off-site mitigation plan for Santilli Circle has substantially changed since the publication of the FEIR. The project proponent no longer proposes to construct a flyover ramp from Revere Beach Parkway (Route 16) eastbound to the Route 99 Connector, which removed eastbound through traffic on the Parkway from the signalized interesctions located on the rotary. Similar to the previous plan, the updated plan still calls for the two signals to remain at the rotary with additional improvements at the circle to accommodate two lanes on Route 99 Connector westbound and three lanes on the circle between the Route 99 Connector and Santilli Highway. A new element to the roadway mitigation plan calls for reconstruction of the ramp exiting from Mystic View Road to Santilli Circle to provide separate ramps for vehicles destined to travel eastbound on the Parkway and for vehicles destined to enter the Circle. Exhibit 1 conceptually shows the improvements.

EXHIBIT 1 – SANTILLI CIRCLE IMPROVEMENTS



The SFEIR presents analysis results using both SYNCHRO and VISSIM software packages. As cited in previous reviews, the SYNCHRO analysis only looks at traffic operations at the signalized intersections, ignoring the impacts associated with the other intersections on Santilli Circle. Therefore, the SYNCHRO results are not realistic or reasonable, and should not be used to measure the impact of the project on the Circle. Our review of the SYNCHRO analysis found one error; it was noted that the 2023 PM Build SYNCHRO analysis in the SFEIR uses the No Build volume of 1,480 vph for the westbound through traffic, instead of the Build volume of 1,603 vph. In addition, we question if the No Build analysis is based upon the actual optimal signal timings implemented at the Circle. We believe the signal timings presented in the No Build analysis may reflect worse operations than may be attainable, skewing the No Build to Build analysis results comparison. 2 3

Our review of the VISSIM files revealed a number of concerns that require additional investigation by the Wynn Team in order to determine if the proposed Santilli Circle roadway improvements are sufficient to mitigate the project's impacts in the vicinity of Gateway Center. Our general technical comments are summarized below.

- The VISSIM model disconnects Wellington Circle from Santilli Circle and Sweetser Circle, which does not accurately represent the existing roadway system. Of further concern, the simulation model shows that the Route 16 westbound queues approaching Wellington Circle back to the end of the link in the model where grid lock forms. It is important that the model connect the link between Wellington Circle and Santilli Circle in order to determine if the Wellington Circle westbound backups interrupt and affect flow upstream at Santilli Circle. 4
- The analysis results show that the Santilli Highway traffic is not adequately being serviced by the proposed improvement plan. In fact, the VISSIM model indicates that less than 40% of the traffic attempting to exit from Santilli Highway to the Circle is getting processed and onto the roadway network. This means that the volume circulating in the Circle is not correct and therefore, the results for vehicles exiting from Mystic View Road are not correct. The VISSIM model shows excessive backups on Santilli Highway. 5
- The proposed mitigation plan calls for reconfiguration of the Mystic View Road intersection with the Circle. It is unclear if the traffic control proposed is for a stop or yield condition to exit Mystic View Road and enter the Circle. There is concern that the volume exiting from Mystic View Road will not be adequately serviced under either traffic control, particularly during the Saturday peak hour when a volume of 850+ vph would have to stop exiting Mystic View Road and yield to 700+/- vph circulating in the Circle. This new ramp configuration warrants a VISSIM analysis of the Saturday peak hour condition to ensure that the proposed mitigation plan is not adversely affecting traffic flow on Mystic View Road. 6

RECOMMENDATIONS FOR COMMENTS

The proponent has not adequately addressed concerns about the transportation impacts, or presented analyses that show how all potential impacts related to transportation have been properly mitigated. The proponent's traffic engineer agreed with our conclusion that the mitigation plan was not adequate at the March 4, 2015 meeting and indicated that they were continuing to refine the mitigation after the completion of the SFEIR. The Wynn team agreed to provide an updated roadway mitigation plan and associated traffic analyses that address the DDR concerns. While that additional information has not been provided yet, DDR requests that an additional supplemental filing be prepared for public review or that the proponent extend the public comment period until such a time when impacts are identified and properly mitigated.

Sincerely,

James H. Grafmeyer
Vice President of Development

John Vitagliano
Principal

Seagull Consulting
19 Seymour Street
Winthrop, MA 02152
(617) 848-1105
seagullconsult@msn.com

March 26, 2015

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Anne Canaday, EEA No. 15060, Appendix G
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Ms. Canaday:
I respectfully submit these comments in regards to the Wynn casino SFEIR, EEA No. 15060, in particular Appendix G-Attachment to Comment, Letter From J. Vitagliano. Because the Wynn SFEIR fails to adequately respond to my critique of the water transportation mode share claims in the FEIR- 6% of person trips- I include it here in the form of Attachment G.

In addition to Attachment G I include the following as further evidence that Wynn's claim that 6% of their casino's patrons and employees will access their site by water transportation is unsupportable and disputed by recent real world operational experience in Boston Harbor, and the distinct possibility that existing LNG operational restraints will intensify as the result of programs to meet the region's growing energy demands. 1

I have attached a Boston Globe article that describes the substantial effects of this winter on Boston Harbor traffic, and scheduled ferry service in particular which was completely shut down for an extended period and adversely affected throughout the course of the winter. While this winter was unusually harsh the general negative effects on maritime traffic are a constant. Note in the article the references to the adverse effects of ice on maritime traffic in the Little Mystic Channel, the direct route of the Wynn ferry to the Everett casino site.

I have also attached a Boston Globe article describing the natural gas pipeline controversy in which the potential of the existing Distrigas LNG system is touted by many, including the Conservation Law Foundation, as an alternative delivery system to pipelines because their Everett facility, adjacent to the proposed Wynn casino, is only operating at 50 percent capacity. This would trigger a significant increase in LNG shipments in Boston Harbor which would be a much larger impediment to Wynn's ferry service than at present. Of course increasing the capacity of the Distrigas Everett facility would also exacerbate the adverse LNG safety factor of the facility with respect to the Wynn casino location.

I've contacted a number of reputable boat builders who have stated that Wynn's vessel specifications-catamarans with a 12 ft. air-draft carrying 49 passengers-would be very expensive due to the catamaran configuration. Furthermore they stated that due to the design's unusually low air-draft requirement, coupled with standard freeboard safety standards, that the Wynn design would require the passenger cabin to be located very low in the vessel, requiring the passengers to step down on entry and step up 2

on exiting which would be not only an obstacle to physically challenged passengers but also a requirement for longer embarking and dis-embarking times, adversely affecting ferry schedules.

Another significant ferry service concern is the low-tide water depth in two critical locations: the east side of the Alford Street Bridge and also a large section of the Mystic River approach to the Wynn casino. Both sites would likely require dredging in order for the Wynn vessels to be certified as operational. 3

There are numerous operational issues that make it highly unlikely that Wynn would be able to achieve the water transportation objectives described in their SDEIR. The intrinsic vessel speed restrictions in the projected ferry route from Boston to the Wynn casino, as described in my FEIR comments, would be a disincentive to passenger usage. The predictable lengthy winter moratorium on ferry service based on actual experience, the necessity of operating at least six ferries per hour (assuming an unrealistic 100 percent vessel load factor) to achieve the person trips mode share claims in the SFEIR, argue against water transportation ever making a meaningful contribution to the Wynn casino transportation system. 4

Sincerely,

John Vitagliano

Attachments, in order:

Boston Globe: winter effects on harbor.

Boston Globe: possible LNG shipping increase.

SFEIR-Appendix G

The Boston Globe

Weather disrupting harbor traffic, too

Extensive ice tangles sea lanes

Author: Abel, David
Date: Feb 20, 2015

Chunks of ice are nothing new this time of year in Boston Harbor, but the vast stretches of frozen seawater evident this winter are unlike anything local mariners can remember.

So much of the vital waterways into the area has frozen that commerce has slowed, passenger ferries have been canceled, the hull of a Coast Guard tender was pierced, and critical buoys indicating dangerous shoals and bends have become unmoored.

"This winter has definitely been one of the worst," said Petty Officer Ross Ruddell, a spokesman for the Coast Guard in Boston. "We're definitely approaching records for the amount of ice formed and broken."

The Coast Guard has deployed two of its ships to break ice in the harbor, a Sisyphean task that since December has required repeated trips from the inner harbor in Boston to Hull Bay.

The work has been so demanding that this week, the Coast Guard cutter Pendant cracked its hull on the ice. Divers had to install a concrete patch on the bottom of the ship; it was back in service before the end of the day.

"This reflects what can happen to a boat that isn't made to run into things," Ruddell said. "When you hit hard, thick, sharp ice, it can put you in a dangerous position."

Boston Harbor has much less traffic in the winter, but harbor pilots and docking masters coordinating tugboats remain at work at all hours of the day, as container ships and tankers ferry oil and natural gas.

George Lee, general manager of Boston Towing & Transportation Co., which operates seven tugs in the harbor, said he could not remember a previous winter that has made it so challenging to navigate the harbor.

Ice blocking narrow channels into ports in Braintree and Quincy has posed some of the biggest problems, especially as important navigation buoys have frozen over and sunken to a point where they cannot be picked up by a ship's radar or have become unmoored by large floes.

The ice grew so thick this week that tugs and barges were frozen near a Citgo terminal in Braintree. The obstruction meant at least one oil tanker, the Green Sea, had to anchor several miles east of Nahant for three days as it waited for either nature or the Coast Guard to clear a passage.

"We have to be very careful with our equipment," Lee said. "When you go into ice, there's a tremendous chance to do damage that can cost a lot of money."

Andy Hammond, executive director of the Boston Harbor Pilot Association, which employs nine specially trained pilots to guide large ships in and out of the harbor, said the combination of high winds, heavy seas, and encroaching ice has forced more jobs to be delayed this winter than he can remember ever happening.

Large amounts of ice in Chelsea Creek and the Little Mystic Channel have also occasionally blocked the primary source of fuel for their two pilot boats.

primary route to Wynn casino.

The extent of ice has also compounded the region's transportation woes.

The ferry connecting Boston to Hingham has been canceled since Monday, while ferry service to Hull was restored for peak commuting hours Wednesday after being shut down earlier in the week.

Seawater, unlike freshwater, does not easily freeze because its high salt content and heavy wave action make it harder for ice to form.

Centuries ago, before shipping channels were deepened, a shallower Boston Harbor tended to freeze over more regularly. Old clips from The Boston Globe cited horses, pedestrians, and skaters on the harbor's frozen surface.

While much of the harbor remains passable, large parts of Dorchester Bay and Hull Bay are completely covered in ice, while large floes can be found as far out as Graves Island Light Station.

On Thursday morning, Bob McCabe had just finished guiding an oil tanker out of Boston Harbor when he descended 90 feet down a snow-covered gangway toward a pilot boat cruising beside the massive ship.

Just as McCabe was about to shimmy down a sodden rope ladder, a colleague steering the smaller vessel noticed a problem heading straight for them: a large ice floe bobbing in the frigid water.

"He's trying to Titanic us!" joked Joe Maloney, captain of the pilot boat.

Before leaving their port, Maloney had pointed to the significant sheets of ice where their boats are moored in East Boston.

At sea, as they passed floes in the inner harbor, he pointed to listing buoys weighed down by ice as he followed closely behind a 600-foot tanker sailing out of the harbor, allowing the ship to serve as an ice breaker.

When McCabe climbed aboard the pilot boat, wearing rubber gloves and a special jacket that inflates on contact with the water, he said his biggest concern is slipping on an icy deck. He took an unexpected plunge into the water in May and said he was lucky a boat didn't crush him.

"It can be treacherous working in these conditions," he said.

Scott MacNeil, a pilot who had guided out to sea another oil tanker, called trying to navigate in channels with damaged buoys and hard-to-see ice a nightmare.

On the way back to East Boston, after plying the ice-covered waters off Hull, Shawn Kelly steered the pilot boat past more floes than he could count.

He said he has damaged propellers on the ice, and as recently as a few days before an engine overheated after getting clogged with slush. He had to put the engine in reverse to clear it out and cool it down with seawater.

adjacent to Mystic Channel, route to Wynn casino.

The Boston Globe

Business

Pipeline opponents say LNG is underutilized

As battle intensifies over pipelines, some assert imports can sate growing natural gas appetite

This is the massive LNG tanker at the Everett terminal that restricts marine access to the Wynn casino site. (JV)

Huge liquefied natural gas ships dock at Everett Marine Terminal and convert their cargo into natural gas for distribution across the region.

By Jay Fitzgerald
March 23, 2015

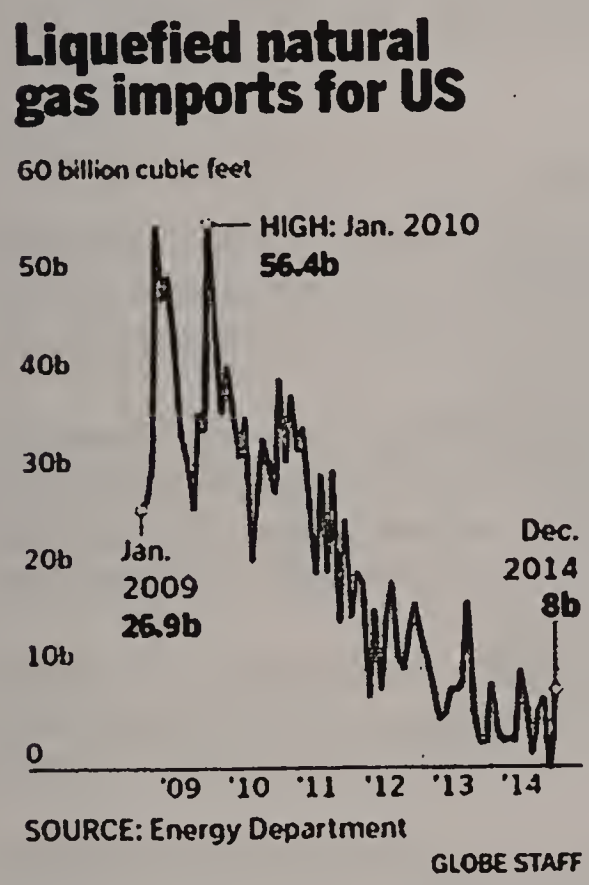
Opponents of proposed natural gas pipelines that would crisscross Massachusetts may have a new ally: a multinational importer of liquefied natural gas.

As Governor Charlie Baker tries to organize a summit of New England governors to address regional energy needs — including the hotly contested issue of building natural gas pipelines — Distrigas of Massachusetts LLC says its LNG facility in Everett is more than capable of meeting the rising demand for natural gas. Officials at Distrigas, owned by France's GDF Suez, question the need for two multibillion-dollar pipeline projects proposed by other energy suppliers and vehemently opposed by neighbors and environmental groups.

"We already have the infrastructure in place," Frank Katulak, chief executive of Distrigas, said of his company's Everett Marine Terminal, where giant LNG ships from around the world dock and convert their cargo into natural gas for distribution across the region. "We absolutely are an alternative to new pipelines. There's no need for major changes or new fees to pay for new pipelines."

Distrigas's Everett terminal, company officials said, is running at about 50 percent capacity, despite a 60 percent increase in LNG shipments this year.

But pipeline companies and utilities backing them contest Katulak's assertion that LNG can fully alleviate supply shortages caused by pipeline constraints, which limit how much natural gas flows into New England from shale fields in Pennsylvania and other states. At best, other energy suppliers say, the LNG from the port is a "backup" source for the increasing number of residents who rely on gas to heat homes and power plants that use it to generate electricity.



Some energy suppliers also note security risks associated with LNG shipments into Boston Harbor, where a team of heavily armed security personnel are deployed in boats and along shorelines every time an LNG tanker steams into the harbor. In the past, law enforcement officials have been concerned about potential terrorist attacks.

But Distrigas's credibility as an additional source of energy grew this winter when increased LNG imports were credited with helping avert natural gas shortages during this winter's extreme cold and record-breaking snow.

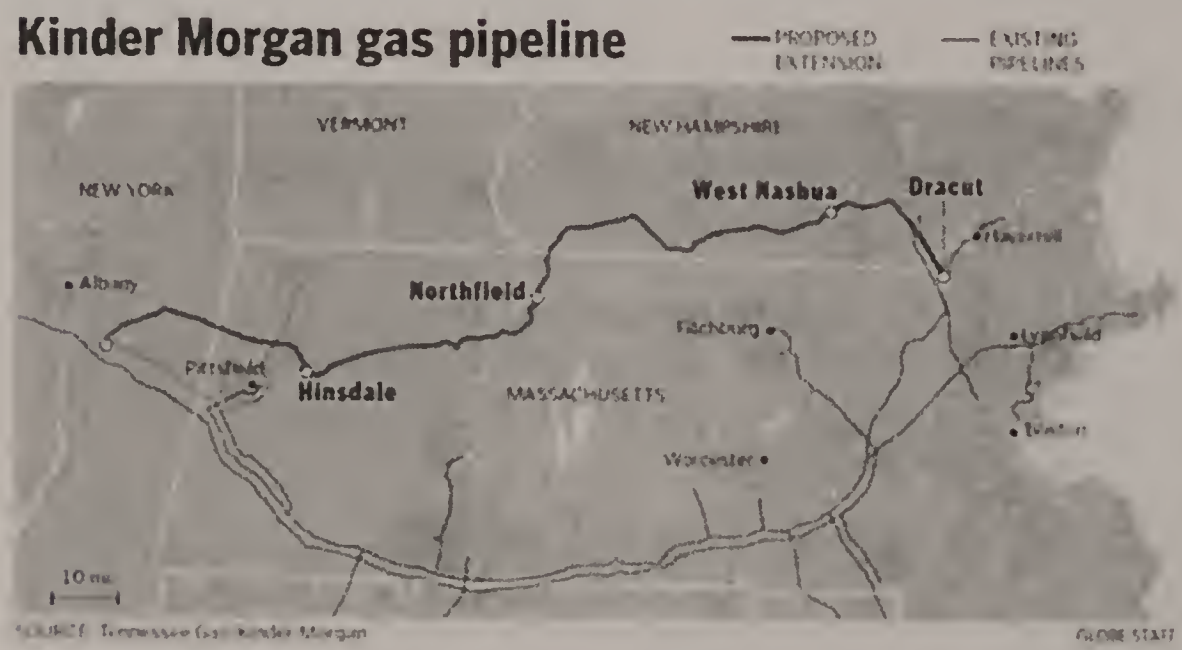
In recent years, similar conditions combined with limited pipeline capacity to create strong demand, short supplies, and soaring costs for natural gas in New England. Higher natural gas costs, in turn, drove wholesale electricity prices higher because most electricity here is generated with natural gas.

Heading into this winter, generators jacked up electricity prices by as much as 40 percent in anticipation of natural gas shortages, which were passed on to consumers by utilities. But those natural gas shortages and electricity price spikes did not happen this winter, partly due to increased LNG shipments.

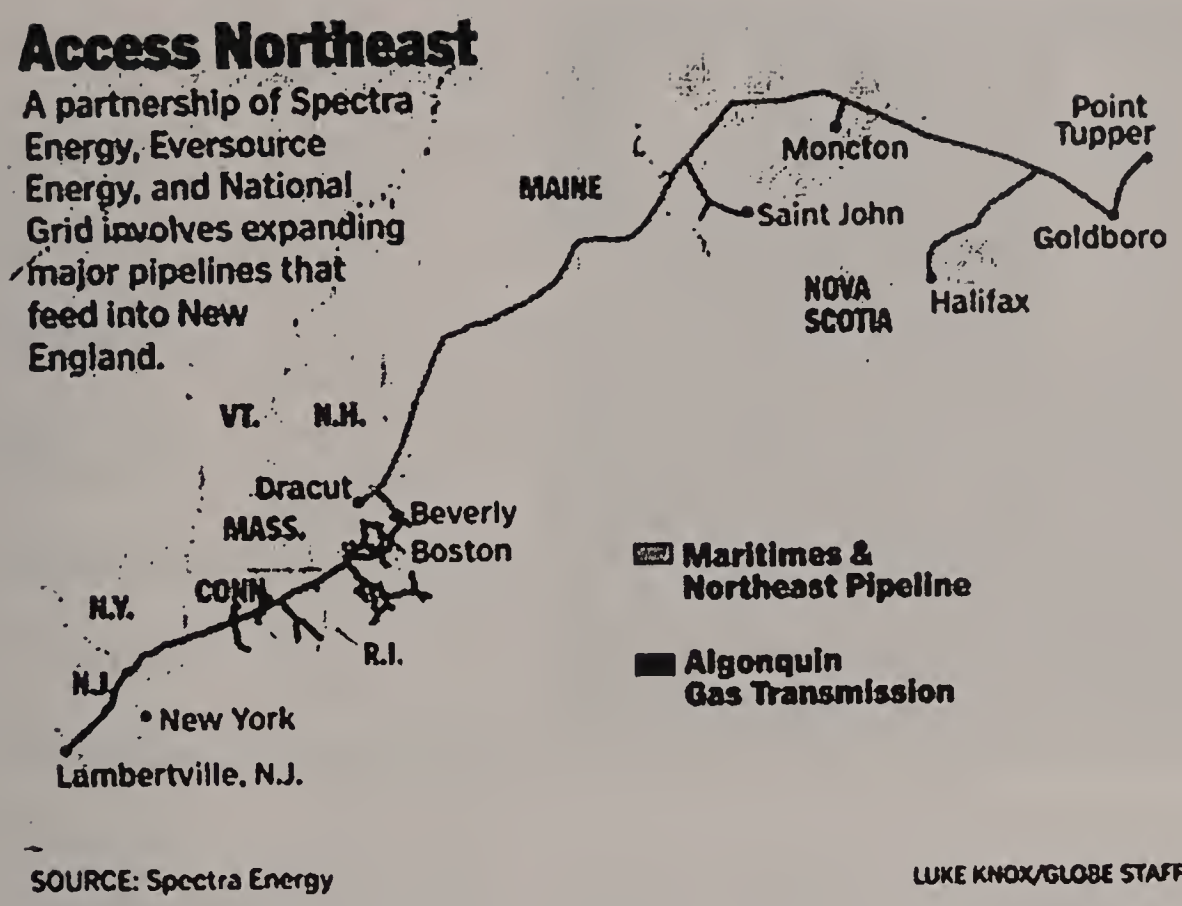
Greg Cunningham, director of the clean energy program at the Conservation Law Foundation, a Boston environmental group, said LNG imports can meet peak demand for natural gas. Cunningham questioned the need for most new pipelines, noting that the price of LNG has plunged by about 50 percent in recent months and should stay low for years because of the vast increase in global supplies of oil and natural gas.

"LNG is way underutilized," Cunningham said. "The fact that there is an existing infrastructure already in place is a big plus."

But backers of new pipelines disagree. Kinder Morgan Inc., a Houston company, has proposed a $4 billion pipeline that would stretch across Western Massachusetts and into southern New Hampshire, before dipping back into Massachusetts in Dracut.



Spectra Energy Corp., another Texas company, has teamed with local utilities Eversource Energy (formerly Nstar and Northeast Utilities) and National Grid to expand the existing Algonquin gas pipeline system in the region. Known as Access Northeast, that project also includes expanding the capacity of the Maritimes & Northeast line, which carries liquefied natural gas from ships anchored off Eastern Canada. The project could cost up to $3 billion. (Customers would pay the costs of pipeline projects through higher rates.)



SOURCE: Spectra Energy

LUKE KNOX/GLOBE STAFF

Officials at Kinder Morgan, Spectra, Eversource, and National Grid said new pipelines are needed to meet the region's growing appetite for natural gas and keep down its electric prices, among the highest in the nation.

"It would be short-sighted to think the underlying problem that contributed to [recent] historically high prices has been fixed," Eversource spokesman Michael Durand said. "Energy prices are still higher here than the rest of the country and New England customers will continue to be negatively impacted without a long-term solution."

Baker, who took office in January, opposed the Kinder Morgan pipeline proposal during last year's gubernatorial campaign. But he has signaled that he is open to Spectra's plan as part of a strategy to diversify energy sources, including wind and solar.

Baker recently met with New England governors at the National Governor's Association in Washington to discuss a number of issues, including energy, an administration spokesman said. Baker's office is trying to schedule a meeting of New England governors to tackle energy issues.

This is the high-security LNG route that is routinely closed for access to the Wynn casino site. (JV)

Some energy suppliers note security risks associated with LNG shipments into Boston Harbor, where a team of heavily armed security personnel are deployed in boats and along shorelines when an LNG tanker steams into the harbor.

Table 2-77 Build (2023) Conditions, Orange Line Northbound Ridership, 7:00-8:00 p.m., Weekday
Table 2-78 Patron Shuttle Route Characteristics between Wynn Everett and MBTA Wellington Station
Table 2-79 Patron Shuttle Route Characteristics between Wynn Everett and MBTA Malden Shuttle Center Station
Table 2-80 Daily Employee Person Trips by Travel Mode
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Table 2-83 Employee Shuttle Characteristics between Wynn Everett and Everett Off-site Employee Parking Facility (To Be Determined)
Table 2-84 Employee Shuttle Characteristics between Wynn Everett and Everett Neighborhood Locations (To Be Determined)
Table 2-85 Average Wait Times for Patron Shuttle at Wellington and Malden Center Stations
Table 2-86 Patron Shuttle – Wellington Station to Wynn Everett - Friday
Table 2-87 Patron Shuttle – Wellington Station to Wynn Everett - Saturday
Table 2-88 Patron Shuttle – Malden Center Station to Wynn Everett - Friday
Table 2-89 Patron Shuttle – Malden Center Station to Wynn Everett - Saturday

Table 3-1 Proposed Transportation Mitigation Measures by Wynn MA LLC
Table 3-2 Proposed DEP Mitigation Measures by Wynn MA LLC
Table 3-3 Proposed DCR Mitigation Measures by Wynn MA LLC
Table 3-4 Summary of Proposed Mitigation Measures by Wynn MA LLC

APPENDICES

Appendix A Distribution List
Appendix B Transportation Appendix
Appendix C Greenhouse Gas and Mesoscale Air Quality Analysis
Appendix D Agreement to Award the Category 1 Gaming License in Region A to Wynnn MA LLC
Appendix E Aeronautical Impact Statement
Appendix F Pedestrian Wind Assessment
Appendix G Attachment to Comment Letter from J. Vitagliano

Appendix G

Attachment to Comment Letter from J. Vitagliano

John Vitagliano
19 Seymour Street
Winthrop, MA 02162
617-846-1105

August 7, 2014

Secretary of Energy and Environmental Affairs
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Analyst: Anne Canaday, EEA No. 15060
100 Cambridge Street, Suite 900
Boston, MA 02114

Subject: Wynn-Everett FEIR/ EEA No. 15060

Dear Ms. Canaday:

I respectfully submit these comments regarding the Wynn-Everett FEIR, EEA No. 15060, in particular the sections in Chapter 4 concerning the sponsor's claim that 6% of the project's patrons and 3% of its employees will access their site by water transportation, a projection that I strongly dispute. Based on my experience in Boston inner harbor improvement programs as a former Massport board member and most recently as a consultant on the new Chelsea Creek vertical lift bridge, involving working closely with the key Boston Harbor regulatory agencies such as the US Coast Guard, US Army Corps of Engineers, the Massachusetts Port Authority, MassDOT and others, I estimate that the Wynn-Everett water transportation passenger ridership projections of 6% and 3% are inflated by at least 100% in both patron and employee categories, even assuming optimum year round maritime operating conditions such as weather which rarely occur.

A significant harbor transit impediment to the Wynn-Everett water ridership projections is that of the bi-weekly closure of the section of the inner harbor by liquefied natural gas carrier (LNGC) vessels supplying the LNG storage facility at the Distrigas facility in Everett located on the Mystic River approach to the Wynn-Everett casino site. This bi-weekly inner harbor LNG closure is mandated by US Coast Guard regulation, specifically Title 33 of the US Code of Federal Regulations as follows: 1

1. No vessel is allowed within two miles ahead and one mile astern of a LNGC vessel underway, nor within 500 yards on either side of such vessel. This essentially closes the segment of the inner harbor route from the World Trade Center and Long Wharf to the Tobin Bridge that Wynn-Everett requires in their FEIR.
2. No vessel is allowed within 400 yards of an LNGC vessel moored at the Distrigas facility in Everett. This essentially closes the segment of the Mystic River required in the Wynn-Everett EIR for ferries to access their site. This condition typically lasts for 24 hours while the LNGC vessel unloads its cargo.

This regular bi-weekly LNGC inner-harbor closure alone represents approximately a 13% reduction of harbor availability for the Wynn-Everett water transportation ridership, which need to be adjusted downward accordingly. In addition to the LNGC harbor restrictions the US Coast Guard also restricts vessel traffic under the auspices of Title 33:CFR for non-LNGC reasons as required for various reasons. Overall these total harbor closures alone would reduce the availability of the inner harbor, including the Mystic River, for the Wynn-Everett FEIR water ferry route by at least 20% from the unrestricted conditions assumption on which the FEIR ridership projections are based, which need to be adjusted downward accordingly.

The complete Title 33 of the CFR is attached.

In addition to these regular harbor safety restrictions there are other maritime operational factors which I am thoroughly familiar with which are the basis of my estimate that the Wynn-Everett water ridership projections are inflated by 100%. 2

The Wynn-Everett DEIR is also deficient in its failure to acknowledge the serious safety and environmental consequences of the Wynn-Everett casino's close proximity to the massive Distrigas liquefied natural gas facility in Everett whose inherent safety is questionable enough that one of former Boston Mayor Thomas Menino's top priorities was the closure of the facility. The Distrigas facility is unique in terms of its proximity to a major urban area. 3

Many detailed and credible studies have been completed by highly reputable sources demonstrating the enormous potential destruction associated with an LNG vapor cloud explosion from a breached LNGC vessel, stemming from either accidental or deliberate means. One scenario shows major damage over a mile from the source. The Wynn-Everett casino would be located 4,000 ft. from an LNCC vessel moored at the Distrigas docks, and closer to the main LNG storage tanks. Please see attached aerial entitled: Wynn-LNG Distance.

Note in particular the Boston Globe graphic, based on a Sandia Laboratories study, showing that the proposed Wynn-Everett casino site lies well within the predicted 4,200 ft. radius within which people would be severely injured from an LNG explosion. 4

I've also attached a copy of a Boston Fire Department study that shows the limitations of the department in coping with an LNG event.

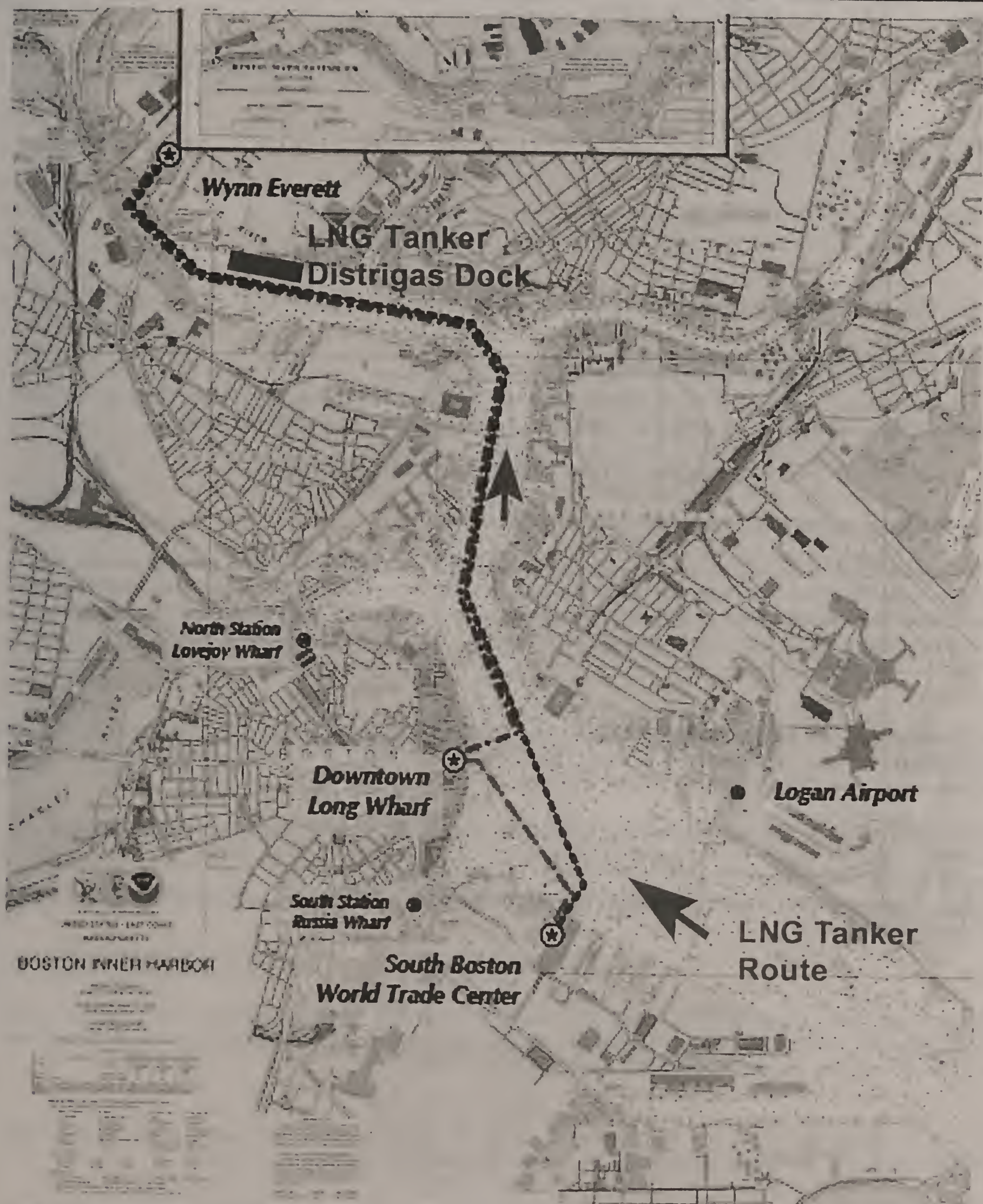
Also attached are various media accounts from Boston Magazine, NBC News, etc.

I've also attached a copy of the Sandia Laboratories study at the end.

Thank you,

John Vitagliano

Wynn-Everett Ferry Conflict With LNG Tankers
Ferry Prohited During LNG Passage & Off-Loading at Distrigas



Canaday, Anne (EEA)

From: TLinc02155@aol.com
Sent: Saturday, March 28, 2015 12:31 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

March 28, 2015

RE: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

I wish to comment on the above SFEIR.

1 - It is imperative that this project does not impinge on the Malden River, River's Edge, or the excellent work done by Preotle, Lane in that area over the past 15 years. 1

2 - I trust that you will require a LEED building, Silver or higher.

3 - Bike path construction as amelioration/mitigation:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

We in Malden, Somerville, Medford and beyond will be living with the consquences of this huge development in our back yard. The least Wynn can do is ameliorate the environmental consequences and improve our quality of life.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0 so that is hardly a valid offer!

Instead, however,,Wynn Resorts should be required to fund both crossings' full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

That is a small price to pay for goodwill. In historical erms, bikeways have hardly been created with any sense of dispatch, so maybe the private sector can help!

Thank you.

Sincerely yours,

Thomas W. Lincoln
27 Gleason Street
Medford, MA 02155

Ellin Reisner, Ph.D.
51 Mt. Vernon Street
Somerville, MA 02145

Matthew A. Beaton, Secretary,
Energy & Environmental Affairs
100 Cambridge Street
Boston, MA 02114

Re: Wynn Everett Casino SFEIR, #15060 March 27th, 2015

Dear Mr. Secretary:

I am a resident of East Somerville who has attended many meetings over the years regarding the redesign of Sullivan Square and Rutherford Avenue with y neighbors in Charlestown. My review of the SFEIR for the Everett Casino has not convinced me that the Wynn Casino analysis and mitigation recommendations are sufficient to improve the traffic situation around Sullivan Square, Rutherford Avenue, Maffa Way, Mystic Avenue NB along I-93 I Somerville and Assembly Square Drive.

The SFEIR does not even address the traffic impacts on Mystic Avenue in Somerville nor does it take into consideration the increased traffic that will result from the build out of the Partners Health Care offices being constructed at Assembly Row. Federal Realty, developer of Assembly Row agreed to restrict auto traffic to 50,000 cars per day. North and south traffic to and from the Everett Casino will utilize I-93 and significantly impact traffic on Mystic Avenue along I-93. This increase in traffic brings more mobile pollution to the residents of East Somerville. The States Avenue neighborhood and residents of streets south of East Broadway will be exposed to more vehicle traffic and pollution which we already know has significant health impacts on residents living in close proximity to highways as noted from research carried out in this area http://sites.tufts.edu/cafeh/ . 1

In addition to the increased air pollution in East Somerville, residents of Charlestown will also experience greater exposure because of increased traffic congestion at Sullivan Square. Wynn has [proposed an "interim" transportation plan that does not address the long term transportation improvements needed for Sullivan Square and Rutherford Avenue. The interim plan keeps the Sullivan Square rotary and underpass. In addition to the traffic congestions the rotary will remain dangerous to enter and exit and maintaining the underpass precludes the long term improvements needed for the area. It is important to make sure that your certificate of approval makes clear that the interim plan is "interim" and that you ensure that Wynn proceed to execute a long term plan that really does mitigate the impacts of the casino development. 2

I also believe that the proposed $250,000 offered by Wynn to study a bike/pedestrian crossing of the Mystic River between Assembly Row (and MBTA station) to the Casino should be

increased to actually cover the costs of designing and building the crossing which will clearly benefit the Casino by making access to the site possible by public transportation (particularly for employees who would most likely travel to the site this way). It is also critical to ensure that in constructing the pedestrian/bicycle crossing that the structure does not interfere with the possible future construction of a circumferential light rail route from the Grand Junction into Everett and Chelsea, as originally proposed in the MA DOT Circumferential Transportation study. 3

For Wynn to seriously address the traffic issues that their development will exacerbate, your certificate should hold them accountable to provide real, long term solutions to the traffic problems that significantly impact the quality of life and economic vitality of the East Somerville and Charlestown neighborhoods.

I appreciate your important role in protecting our communities and the environment in the Commonwealth.

Sincerely,

Ellin Reisner

Ellin Reisner, President
Somerville Transportation Equity Partnership

Cc: Mayor Curtatone
Alderman Matthew McLaughlin
Stephanie Pollack, Secretary of Transportation

Canaday, Anne (EEA)

From: Lynne Levesque [lynnelevesque@gmail.com]
Sent: Friday, March 27, 2015 12:01 PM
To: Canaday, Anne (EEA)
Cc: mayor@cityofboston.gov; 'Ryan, Dan - Rep. HOU'; sal.didomenico@masenate.gov; Salvatore LaMattina; McHugh, James (MGC); Cameron, Gayle (MGC); Stebbins, Bruce (MGC); Crosby, Steve (MGC); Zuniga, Enrique (MGC); Ziemba, John S (MGC); Pollack, Stephanie (DOT); Canaday, Anne (EEA); Gina.Fiandaca@boston.gov; anthony.gallagher@boston.gov; mdraisen@mapc.org; Gupta, Vineet; 'John Tocco'; Bob Desalvio; kpyke@hshassoc.com; cgordon@dirigogroup.net; jfay@fpa-inc.com
Subject: EEA# 15060 Wynn Resort Supplemental FEIR

March 27, 2015
20 Lawrence Street #3
Charlestown, MA 02129

Secretary Matthew Beaton
Executive Office of Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114
via email to: anne.canaday@state.ma.us

Re: EEA# 15060 Wynn Resort Supplemental FEIR

Attention: MEPA Office/MEPA Reviewer

Dear Secretary Beaton,

I am a resident of Charlestown who has lived in this very special neighborhood for almost 17 years. My home is located two blocks from Rutherford Avenue. Because I have so much at stake from the Wynn casino development and from plans for Sullivan Square/Rutherford Avenue, I have become actively involved in a group known as the "Engaged Charlestown Residents." While our group grew out of the "Yes on Proposition 3" effort, it has expanded over the months since November to include a quite large cross-section of the Charlestown community.

As part of the conditions of the Massachusetts Gaming Commission's (MGC) award to Wynn, Wynn is required to consult and work with the Charlestown community. Our group has thus been meeting with Wynn over the past few months to ensure the protection of Charlestown's interests. We have held open community meetings on February 11, March 9, 10, 11, and 24 to discuss the planned development and transportation and traffic, environmental, and economic development issues and concerns. Another open meeting is scheduled for April 6th for a discussion around the community's concerns regarding the removal of the contaminants from the Wynn site.

The benefits of the Wynn proposal have been documented by others, so I will focus my comments on two areas of concern that I still have regarding Wynn's SFEIR:

1. **Sullivan Square/Rutherford Avenue.** When I first arrived in Charlestown in 1998, I began attending meetings regarding the redesign of Sullivan Square and Rutherford Avenue to make our lovely neighborhood more livable. Although I still believe that the award of the casino license to Wynn is most unfortunate, it appears that a possible result of the award could be progress in Sullivan Square. However, I have concerns regarding their proposal.

    a. While Wynn representatives have been most responsive in providing the community with information about their plans, we have no way of knowing if the City of Boston agrees with their plans and traffic numbers. Representatives of the City have been unable to participate in any of these meetings because of the pending lawsuit filed by the City against the MGC.

b. It makes no sense to me that Wynn plans to spend $10 million and perhaps more for a short-term solution to be completed within 3 years prior to their opening. While I understand that part of their design could be incorporated into a long-term solution, I fear that moving forward with their plan will negatively impact progress on the long-term plan for improving Sullivan Square and Rutherford Avenue and will perhaps result in the potential waste of money that could be better spent on a long-term solution. 2

c. Wynn maintains that their short-term plan will work with either the surface or the tunnel solutions to the Sullivan Square/Rutherford Avenue traffic disaster. It is unclear to me if this is in fact true, again since the City has not shared their reactions to Wynn's plans with the Charlestown community as a result of the pending lawsuit. 3

d. It appears that the change in administrations in Boston, the awarding of the Wynn Casino license, and now the City's lawsuit against the MGC have put a stop to any plans to move forward with a long-term solution on the City of Boston's part. If the City waits for the lawsuit to be settled before moving forward with long-term planning for Sullivan Square/Rutherford Avenue, valuable time will be wasted. Rather than spending energy on the 2024 Olympics – 9 years from now, the City should be devoting energy, time and resources to fixing Sullivan Square/Rutherford Avenue now, a disaster that has been lingering for too many years and will only grow worse in the next few years.

e. Given all of the above issues, I would respectfully ask, should you choose to issue a certificate to Wynn to proceed with their plans, that you also require the City and the State to move forward immediately with a long-term plan <u>and its execution</u>.

2. **The Project's Environmental Impact on Charlestown.** While not specifically referenced in the SFEIR, the planned development and its illumination could have significant negative impact on Charlestown, its historic resources, and recreational areas that deserve environmental consideration, consideration that as far as I know has not been given to date. I would respectfully ask that you require Wynn to provide the Charlestown community with the following with enough lead time prior to construction to allow for our response and any suggested changes in plans:

a. *In situ* mock ups of all lighting poles, any proposed illuminated items and signage, lighted displays within a building that are intended to be seen from a distance, and hi-readers, including anything considered by a layperson to be a light or a sign, that is associated with the Wynn Casino, wherever they may be located, to determine any impacts on Charlestown, especially our historic Bunker Hill Grounds, the Phipps Street Burying Ground, and the Charlestown Heights/Doherty Playground, all listed in the National Register of Historic Places, plus the Barry Playground located next to the Alford St. Bridge and any other playgrounds along the Mystic River; 4

All mock ups must take place using standard methods for determining visibility and impacts used by the cell tower industry, on non-windy, non-rainy days, with adequate notice to community groups (minimum of 5 days) with expected times of cranes and balloons, so the community groups can post volunteers with cameras at numerous places on potentially impacted resources. Such mock ups to include wattage, illumination color, lumens, and intensity of all the above listed signs and items with reference charts and site maps of each item.

b. A listing of the corner points and roof heights, including mechanicals, of all structures within the Wynn Development to see the actual heights and dimensions in relationship to each other and visibility from Charlestown's historic and recreational resources. 5

c. A listing of the times of day and night throughout the year with the highest and lowest intensity of each of the above listed signs and items; 6

d. A description of the controls and remedies regarding maximum allowed standards that will be put into effect by the appropriate State agency to test the Wynn stated maximums, with funds for such testing to be placed in escrow by Wynn with the appropriate state agency; 7

Thank you for your consideration of my concerns while you assess Wynn's SFEIR.

Sincerely,

Lynne C. Levesque

Lynne C. Levesque, Ed.D.

617-242-7801

Copies to :

Mayor Martin J. Walsh, City of Boston
State Representative Daniel J. Ryan
State Senator Salvatore DiDomenico
City Councilor Salvatore LaMattina
Stephen Crosby, Chair, Massachusetts Gaming Commission
Gayle Cameron, Commissioner, Massachusetts Gaming Commission
James McHugh, Commissioner, Massachusetts Gaming Commission
Bruce Stebbins, Commissioner, Massachusetts Gaming Commission
Enrique Zuniga, Commissioner, Massachusetts Gaming Commission
John Ziemba, Massachusetts Gaming Commission
Stephanie Pollack, Secretary of Transportation
Gina Fiandaca, Commissioner, Boston Transportation Department
Anne Canady, MEPA
Anthony Gallagher, City of Boston Gaming Accountability Office
Marc Draisen, Metropolitan Area Planning Commission
Vineet Gupta, Boston Transportation Department
John Tocco and Robert DeSalvio, Wynn Development
Jamie Fay, FPA Inc.
Keri Pyke, HS Associates
Chris Gordon, Dirigo Group

Canaday, Anne (EEA)

From: Sam Miko [samiko10@gmail.com]
Sent: Friday, March 27, 2015 12:32 PM
To: Buckley, Deirdre (EEA); Canaday, Anne (EEA); MGCcomments (MGC)
Subject: Supplemental Final Environmental Impact Report submitted by Wynn MA, LLC

Secretary Matthew A. Beaton

Executive Office of Energy and Environmental Affairs

Attn: MEPA Office

100 Cambridge Street, Suite 900

Boston, MA 02214

Reference: EOEEA# 15060

Wynn Everett Schedule Assumptions

Dear Secretary Beaton:

I have reviewed the above-referenced Supplemental Final Environmental Impact Report ("SFEIR") submitted by Wynn MA, LLC ("Wynn") and offer the following comments and concerns. In particular, I am concerned that the SFEIR did not provide adequate analysis of the effect on the Project's mitigation plans and construction schedule that may be caused by (1) the substantial delays and additional reporting that is needed for remediation of the Monsanto Site; (2) the custom manufacture of the necessary vessel fleet and infrastructure to carry the large number of patrons projected to travel to and from the Project on water transportation; and (3) the necessity for Wynn to acquire numerous parcels of land to complete the improvements proposed.

Wynn has stated in that SFEIR that it "intends to complete the MEPA process in March 2015 and then immediately proceed with permitting and the initiation of transportation mitigation." Wynn also stated that "[c]onstruction activities are intended to commence thereafter (anticipated start of construction is first quarter of 2015) with an opening to the public anticipated in late 2017." SFEIR at p. 1-15-16. Notwithstanding this schedule, Wynn continues to drastically change the program for the Project, having added gaming positions and hotel rooms while modifying other elements between the FEIR and SFEIR. As recently as March 19, 2015, at a meeting before the Massachusetts Gaming Commission, it was suggested that additional modifications to the Project may be forthcoming. It would seem that regulators and the public would have much difficulty properly analyzing the Project with so many changes and so much uncertainty.

Nonetheless, Wynn already is substantially behind the seemingly optimistic schedule presented in the Massachusetts Gaming Commission's RFA-2 Application for a Category 1 Gaming License. In that application, Wynn stated that "[s]ite remediation would begin upon receipt of a gaming license and is estimated to be complete by the end of the first quarter of 2015. On-site infrastructure/sitework would begin late 2014 and is estimated to be complete by the end of the first quarter of 2016. The main building (core and shell) is estimated to be complete by the end of 2016. The interior fitout will be completed in the second quarter of 2017 and the opening to the public will occur soon thereafter." Wynn RFA-2 Response 2-10.

Greater attention to analysis of these three issues is particularly critical for this Project given the time constraints imposed by the Expanded Gaming Act. The Act states that ". . . total infrastructure improvements onsite and around the vicinity of the gaming establishment, including projects to account for traffic mitigation as determined by the commission, shall be completed before the gaming establishment shall be approved for opening by the commission." M.G.L. c. 23K, § 10(c). The Massachusetts Gaming Commission has publicly stated its expectation that the Wynn resort will open in 2017. As stated in more detail below, this projection requires further analysis because it seems inconsistent with Wynn's site remediation schedule and other prerequisites to completing Wynn's on- and off-site infrastructure mitigation plans.

1. Environmental Delays

The Project will be constructed on property formerly owned by FBT Everett Realty, LLC ("FBT") also known as the Monsanto Site, which is subject to the cleanup standards in G. L. c. 21E and the Massachusetts Contingency Plan. FBT entered into an Administrative Consent Order with MassDEP in June of 2014 to delay submission of a Phase IV Remedy Implementation Plan until June of 2015 to account for additional analysis of Wynn's proposed expanded use of the property for a casino gaming resort (including water transportation infrastructure and a large underground garage). FBT filed a Phase III Remedial Action Plan in August of 2013.

Wynn has now received permission from MassDEP to file on December 31, 2015 a Supplemental Phase II Remedial Action Plan Report including an assessment of sediment and surface water. Wynn will now submit a Supplemental Phase III Remedial Action Plan and a Phase IV Remedy Implementation Plan on June 30, 2016 – one year from the previous deadline. See MassDEP Notice of Responsibility/Establishment of Interim Deadlines, available at http://public.dep.state.ma.us/fileviewer/Default.aspx?formdataid=0&documentid=293832.

The Final Environmental Impact Report ("FEIR") and the SFEIR do not adequately address the impacts of this schedule delay and request for additional reporting to MassDEP. The long delay in the interim schedule for remediation of the Monsanto Site may have substantial impacts on the Project's construction timeline – both for on-site construction and construction of on- and off-site mitigation. However the SFEIR provides no analysis of the impacts of these delays nor the impacts on the mitigation proposals. Nor does the SFEIR discuss whether there will be additional delays or further analysis required to implement a remedy that will enable construction of the Wynn Project at the Monsanto Site. Given that there will be at least a one-year delay in the submission of a Remedial Implementation Plan to MassDEP, and that this submission is a mere eighteen (18) months before the end of 2017, it seems unlikely that the Project could open to the public on its stated schedule. 1

2. Feasibility of Water Transportation Plans and Effect on Mode Share

Additionally, it is likely that the Supplemental Phase II Remedial Action Plan Report will analyze the very feasibility of remediation of contaminated sediments and surface water along the shoreline. This is the area in which Wynn has proposed construction of a large-scale dock station for a water shuttle. Wynn has projected in the SFEIR mode share distribution analysis that 6% of the resort's patrons will arrive and depart on this water shuttle.

However, neither the SFEIR nor the FEIR supply adequate analysis on the feasibility of construction of the necessary infrastructure to support the water shuttle, nor the effect that elevated levels of contamination in the sediment and surface water would have on the ultimate feasibility of these water transportation proposals. There is no analysis – even though such analysis was requested by several commenters on the FEIR including the City of Boston Transportation Department – of the impacts to traffic on local roadways that would be occasioned by the displacement of 6% of the Project's patrons should subsequent analysis preclude a permanent solution that would enable construction of the infrastructure necessary to support water transportation. These questions impact more than just transportation mitigation, but also Wynn's plans to create new open space and public access to the Mystic River. 2

Moreover, the SFEIR provides insufficient explanation whether there will be difficulty or delays in procuring and manufacturing the custom fleet of high capacity passenger boats capable of transporting 6% of Project patrons through the congested waters of Boston Harbor and beneath the 12-foot clearance of the Alford Street drawbridge in the time span described in Section 4.4.3. 3

At minimum, Wynn should have provided specifications for the boats, a plan for their procurement, and a schedule for their manufacture, as well as more specific analysis to support its operational projections. I am skeptical that any passenger boats currently in operation in the United States would fit the criteria that the Wynn Casino needs (capacity of 49 passengers, clearance above mean high water of 12 feet or less, and capable of traveling at the speeds projected by the SFEIR). Even still, Wynn should have provided substantiation in the SFEIR that the full fleet of vessels and infrastructure necessary to accommodate 6% of Project patrons will be in service by the projected opening.

3. The Need for Land Acquisition

The SFEIR states, without further detail, that there is additional land, both within the Project site and land needed for roadway improvements, that Wynn must acquire to satisfactorily complete the infrastructure improvements it has proposed. However, the SFEIR does not show the needed parcels nor adequately analyze the impacts of the required acquisitions. Additionally, the need for several complex land transactions further invites delays to completion of mitigation, which are not acknowledged nor analyzed in the SFEIR.

To acquire highway rights-of-way needed for the infrastructure improvements proposed to mitigate the traffic impacts of the Project the SFEIR make clear that, at minimum, land takings will be necessary at Lower Broadway and Alford Street (Route 99) in the Cities of Boston and Everett and at Sullivan Square in the City of Boston. Wynn should provide additional analysis, identifying with specificity all parcels needed for mitigation, the possibility of delays in the acquisition schedule, and contingencies if it is not able to acquire the necessary parcels through a lawful transaction. 4

Please require Wynn to provide this additional information so those of us who will be impacted by this project can truly understand its impacts.

Article 97 Concerns

Finally, I am also concerned by plans that show Wynn will take open space in the Mystic River Reservation and perhaps elsewhere that is protected by Article 97. As noted in its August 8, 2014 comment letter on Wynn's FEIR, the Department of Conservation and Recreation owns and operates open space that Wynn has proposed to alter in the SFEIR and FEIR, including Mystic Valley Parkway (which includes Wellington Circle), Revere Beach Parkway (which includes Santilli Circle) and the Mystic River Reservation. In Wellington Circle, Wynn's proposal to widen the roadway to add travel lanes, reconstruct sidewalks and build other modifications comes at the expense of existing open space protected by Article 97. 5

This is more than simple "open space" – it is land protected by the Massachusetts Constitution. More specifically, the land proposed for lane widening in Wellington Circle as described on Page 2-55 and shown on Figures 2-67A, 2-67B, and 2-67C, is currently protected from disposition or modification under Article 97. As you know, disposition or use of protected land for roadway widening is prohibited without a vote of two-thirds of the Legislature.

Please require the Wynn project to comply with the provisions of Article 97 of the Constitution.

Thank you,

Samantha A. Miko, Esq.

March 5, 2015

RECEIVED
MAR 10 2015

Matthew Beaton
Exec Office of Energy and Envt Affairs
Attn: MEPA Reviewer
100 Cambridge St, Suite 900
Boston MA 02114

RE: **EEA 15060** ...proposed bicycle accommodations at Sweetser Circle,

I am opposed to this proposal.

The entire purpose of biking is to provide an alternative to taking the car. Since this is the only most popular and direct route for bicyclists into Boston from the North, I cannot believe this is supposed to be an actual proposal.

How is this proposal providing an alternative to taking the car? 1

The proposal says that: **A bicyclist will DISMOUNT THEIR BIKE and walk on the sidewalk around the rotary until ramping down to a dedicated bicycle lane on Broadway (Route 99)**.

I implore you to help the use of good reasoning with a proposal.

Please insist that another alternative with good bike sense is employed.

Sincerely,

Charles D'Entremont

Charles D'Entremont
101 High St
Malden, MA 02148
e-mail: cfdentremont@msn.com

89 Waltham Street, Unit 4
Boston, MA 02118

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA #15060
100 Cambridge Street,
Boston, MA 02114

Dear Mr. Beaton:

I write to let you know that I strongly endorse the plans of Bike to the Sea ***to ensure that the design of Sweetster Circle in Everett provides adequate accomodations on the extremely critical bicycle route*** leading from the north in and out of Boston, and ***to design and permit the Mystic Crossing Bridge so these can be built within the next five years.*** I grew up in Everett and went to college at Boston State at the corner of Longwood and Huntington Avenues in the early '70s. It is interesting to note that if I went in my car it only took me on average 30 minutes and ten additional minutes to find a parking space. While if I took the "T," it was an average of 60 minutes. Biking the same distance took ten minutes ***less*** than the "T!" However, I never felt very safe riding through Sweetser Circle, Lower Broadway and Sullivan Circle (where I once fell on the old trolley tracks that were still embedded in the ground though they had not been used for some years).

It is time to move in the right direction for those who cycle for pleasure, for their health, for the environment and to alleviate traffic. If we can make it safer, I am convinced we will see many more cyclists hitting the road into and out of Boston.

You and I are well aware that the length of road from Sweetser Circle to Lower Broadway and Sullivan Square is one of the three areas in metropolitan Boston which is responsible for serious traffic delays ***now,*** as a study released three years ago. God alone knows how much worse it's going to become. We might as well do what we can to look after cyclists and pedestrians who are going to get through come "hell or high water!" Let's make it safe for them.

Respectfully,

CDR Lawrence J. Russo, USNR(ret)
Teacher, Everett School System, Retired

RECEIVED
MAR 27 2015
Executive Office of Energy
& Environmental Affairs

RECEIVED
MAR 27 2012
Executive Office of Energy
& Environmental Affairs

TO: anne.canaday@state.ma.us, Jamie.Ennis@state.ma.us

RE: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

March 27, 2015

To Secretary Beaton and Chairman Crosby:

I agree with the general aim of the below, indented comments being sent by transportation advocates.

Further, I implore the relevant state authorities, and the communities, to encourage Wynn to take ownership of this project. It is an opportunity to expand their architectural presence while serving an important need. It will be a bridge and gateway that is uniquely positioned to be a landmark definition of the transportation and recreational landscape of Greater Boston for decades.

I sincerely believe that a privately designed, funded, and built structure, even if it requires ongoing private endorsement, advertisement, or architectural integration with the casino, will be a true victory for regional infrastructure. Moreover, I don't think it's prudent, nor cost-effective, nor worthwhile, to make this a state initiative relying on arbitrary private funding.

Wynn ought to construct a separate bridge, and ought to make it into an iconic architectural statement. Not only will it directly feed their resort via the rapidly growing regional walk and bike network, and via the Assembly Square T station, but it will serve as a lasting gift to the Greater Boston region. It can solve many issues at once: it will directly impact traffic loads, serve as an environmental offset, all while having the potential to blend with the overall site.

> *If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.*
>
> *Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been*

done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

John Sanzone
sanzoneandpark.com
sanzoneja@gmail.com
Cambridge, MA

P.S. Please feel free to reach out to me to discuss this initiative further. This is an essential and game-changing connection that has potential, with its local and regional connections, to relieve the traffic network of thousands of daily automobile trips. I would love to work with the Commonwealth and Wynn to do something exciting and impactful, and I know many other advocates wish the same.

Canaday, Anne (EEA)

From: Jeffrey Leclair [jleclair@gmail.com]
Sent: Friday, March 27, 2015 2:31 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino bridge

Secretary Beaton and Chairman Crosby:

I am sure you are aware of the position that the Friends of the Community Path have in regard to the pedestrian bridge over the Mystic. As a member of that organization, I firmly support their stance.

I also support the stance as a member of the MyRWA, and an active user of the Mystic River area.

Requiring Wynn to construct the pedestrian and bike bridge makes sense from the public's, towns', and from Wynn Resorts' interests, as it would only improve access to the casino, river, and increase low-impact use of the site.

Thank you for your time.
Jeffrey Leclair
Somerville, MA

ALAN MOORE

23 Cherry Street ♦ Somerville, MA 02144

(617) 455 2103 ♦ alan@pathfriends.org

March 27, 2015

Mr. Matthew Beaton
Executive Office of Energy and Environmental Affairs
Attn: MEPA Reviewer EEA 15060
100 Cambridge St, Suite 900
Boston MA 02114

via email to: anne.canaday@state.ma.us

Re: Wynn Casino, Everett MA, EEA 15060

I am pleased to have the opportunity to submit the following comments on the Supplemental Final Environmental Impact Report on this project:

Please require Wynn Resorts to fund a 75% design and permitting of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as a condition of receiving MEPA approval of their proposed casino in Everett. Such a crossing (studied by the DCR in 2009) of the Mystic River would provide the casino with a direct connection to the Orange Line subway station at Assembly Square via a 10-15 minute walk, there eliminating vehicle trips to the casino (which is only 1,100 feet from the station yet, without this crossing, has no connection). This crossing would also provide a needed connection between Somerville and Everett, complete the regional greenway/path network and be part of the 2,900 mile East Coast Greenway. The 75% design should be completed before the casino opens and if the casino's traffic mitigation plans do not meet the established targets, Wynn Resorts should also be required to construct the crossing.

To address the adverse impacts of additional motor vehicle traffic around the project area that will discourage walking and bicycling, I also request that Wynn Resorts be committed to design and build the extension of the Northern Strand Community Trail from its terminus at West and Wellington Streets to the Mystic River within 5 years. The Chapter 61 finding could require at least a 75% design for this segment be developed prior to project opening.

Thank you very much for your consideration of these requests.

Sincerely,

Alan Moore

Alan Moore

Canaday, Anne (EEA)

From: Stephen Winslow [swinslow4152@gmail.com]
Sent: Monday, March 30, 2015 10:21 AM
To: Canaday, Anne (EEA)
Subject: Re: Bike to the Sea Comments - Wynn Casino SFEIR EEA #15060

Anne:

Just to highlight one of the comments, MA DOT and Wynn have been apprised of the comments and were working on possible solutions and Wynn and a coalition of bicycle/trail groups have been in contact for a discussion about the Mystic Crossing.

Steve

On Thu, Mar 26, 2015 at 6:50 AM, Stephen Winslow <swinslow4152@gmail.com> wrote:
Please find attached Bike to the Sea's comments on the Wynn Casinon Supplemental Final EIR. EEA #15060

Please confirm receipt to the e-mail below

Stephen Winslow
swinslow4152@gmail.com
781-738-2835

Canaday, Anne (EEA)

From: weisswoman18@hotmail.com on behalf of Lynn Weissman [lynn@weisswomanproductions.com]
Sent: Friday, March 27, 2015 2:04 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Cc: Ziemba, John S (MGC); Lenicheck, Jon; patricia.Jehlen@state.ma.us Timothy.Toomey@mahouse.gov denise.provost@MAHouse.gov; William.Sutton@mahouse.gov jordan.neerhof@mahouse.gov; daniel.weber@mahouse.gov; aldermanconnolly@gmail.com; aldermansullivan@aol.com; aldermanwhite@comcast.net; mmclaughlin@somervillema.gov; mheuston@hotmail.com; tony@tonylafuente.com; Niedergang Mark; Rebekah Gewirtz; Ellin Reisner; denison@gmail.com; Jackie Douglas, Livable Streets; Pete Stidman, Boston Cyclist Union; Eric Halvorsen, MAPC; Wendy Landman, WalkBoston; friends of the community path; Alan Moore, Friends of the Community Path
Subject: Wynn Casino, EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

I am writing am writing as a citizen of Somerville for 20 years. As I understand, today, 3/27, is the comment deadline. I belive that **the Wynn Everett Casino will overshadow the Mystic River and Assembly Square, likely absorb much of the Rt. 28 and Rt. 99 traffic capacity, and likely inhibit the success of Assembly Square. I am against the building the Casino.**

However, **if the Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville** as an environmental mitigation condition of permitting the proposed casino and hotel development in Everett.

According to the he 3/17/2015 Supplemental Final Environmental Impact Report
https://www.dropbox.com/sh/tueh44kp2peol9a/AADIpAI8jwusYx2dXbx5ankYa?dl=0
Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential pedestrian bridge crossing... ".

Instead, however the Wynn Resorts should be required to do both crossing design and construction in order to be built, because the 2009 report. "Alternatives Analysis: Bicycle & Pedestrian Crossing of the Mystic River
https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0
already included the design and selection of the crossing. This 2009 Report analyzed **at least four designs for a bicycle and pedestrian connection are feasible**, and all of them would cost approximately $6 million, or less than half of 1% of the casino's project cost.

For this small mitigation cost, the connection would provide many benefits for the region:

1) The bridge will unify both sides of the Mystic River park system:
2) It will connect Somerville's recently rebuilt Sylvester Baxter Park to the new parks that Wynn plans to build on the Everett riverfront.
3) The Metropolitan Area Planning Council (MAPC) has identified a pedestrian and bicycle crossing in this location as critical for connecting the regional "LandLine" system of active transportation routes, including Everett's new Northern Strand (Bike to the Sea) trail, filling a major gap in the regional bicycle network.
4) The MBTA Orange Line's new Assembly station is only 0.2 mile from the Wynn development, yet there is currently no way to walk or bike across the Mystic River between Somerville and Everett. A new pedestrian-bicycle bridge from Somerville's Draw 7 Park to Everett would unlock high-capacity transit access.

5) A bridge at this location can also provide Orange Line access for the Gateway Center shopping mall in Everett, unlocking the underused surface lots there to be re-imagined as higher-density, transit-oriented development.

6) Patrons of the Wynn Resorts facility would be a 5-minute walk from the Orange Line and the shopping and entertainment district of Assembly Row. Many of them would not need to drive to reach downtown Boston, Logan Airport, or other destinations.

I hope that the Wynn Resorts project will take advantage of this unique opportunity to improve the environment through pedestrian and bicycle transportation in our region.

Thank you for all your hard work and consideration of these comments.

Respectfully,
Lynn Weissman
112 Belmont Street
Somerville, MA 02143

Canaday, Anne (EEA)

From: Sillman, Frederick H.,M.D. [FSILLMAN@PARTNERS.ORG]
Sent: Friday, March 27, 2015 2:24 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn bike/ped Mystic crossing

TO: anne.canaday@state.ma.us; Jamie.Ennis@state.ma.us

Dear Ms. Canady and M. Ennis:

If the Wynn Casino is approved, we urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you for your help.

Respectfully, *Jane & Fred*

Frederick & Jane Sillman, MDs
8 Gerry St.
Cambridge, MA 02138

The information in this e-mail is intended only for the person to whom it is addressed. If you believe this e-mail was sent to you in error and the e-mail contains patient information, please contact the Partners Compliance HelpLine at http://www.partners.org/complianceline . If the e-mail was sent to you in error but does not contain patient information, please contact the sender and properly dispose of the e-mail.

Canaday, Anne (EEA)

From: Cathy Evans Wilson [cathyevanswilson@gmail.com]
Sent: Friday, March 27, 2015 2:33 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: RE: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

On a personal note, I would like to add that our last few car rides out to Everett to go shopping at the Gateway Center have been pretty horrific from a traffic perspective and unless there are alternative means of travel north into Everett from Somerville/Medford that do not involve cars following the construction of the casino, you can add my family to the list of people that will be taking our spending dollars elsewhere.

Thank you.

Respectfully,
Catherine Evans
83 Jaques St
Somerville, MA
617.817.3727

Canaday, Anne (EEA)

From: Seth Avakian [sethavakian@gmail.com]
Sent: Friday, March 27, 2015 2:44 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

I am a Somerville resident and frequent bike rider. I am concerned with the traffic that the Casino will generate, especially considering that my trips to Target in Everett are already slow.

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,
Seth Avakian
25 Raymond Ave
Somerville, MA 02144

Canaday, Anne (EEA)

From: Pebble Williams [pebble.williams@cru.org]
Sent: Friday, March 27, 2015 2:44 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn bike/ped Mystic crossing

To Secretary Beaton and Chairman Crosby:

I am concerned about the Wynn Casino's socio and environmental impact. I do not want it to be approved. However, I believe there can be a more responsible concession to the surrounding communities.

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,
Pebble Williams
32 Marion St.
Medford, MA 02155

--
Pebble Williams
Cru Boston
pebble.williams@cru.org

Canaday, Anne (EEA)

From: Christopher Ferry [christopher.ferry@gmail.com]
Sent: Friday, March 27, 2015 2:45 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,
Christopher P. Ferry
263 Highland Ave., Apt. 3
Somerville, MA 02143

Canaday, Anne (EEA)

From: zebrose@gmail.com on behalf of Kate Zebrose [kate@zebrose.com]
Sent: Friday, March 27, 2015 2:59 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

As you can probably tell I was inspired by the Friends of the Community path to voice my support for requiring a river crossing as part of the casino project. I think this is such an important part of incorporating this development into our evolving transportation infrastructure. It is so important for our state government to hold developers accountable and not let them pretend to add value for repeating work that has already been done.

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission to require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design has already been done in 2009MysticRiverCrossing.pdf.

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,

Kate Zebrose
26 Josephine Ave
Somerville, MA
kate@zebrose.com
H:(617) 776-1777
C:(617) 840-9673

Canaday, Anne (EEA)

From: Susan Mcanneny [mcanneny@rcn.com]
Sent: Friday, March 27, 2015 3:59 PM
To: Canaday, Anne (EEA)
Subject: Wynn Casino Bike/Ped Crossing

RE: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I would fully back you in ensuring MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/pedestrian bridge crossing", but this design has already been done: (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both the crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost. Thank you.

Respectfully,
Susan Mcanneny

33 Pearson Road
Somerville, MA

Canaday, Anne (EEA)

From: Fritz Holznagel [fritzholz@gmail.com]
Sent: Friday, March 27, 2015 4:06 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060 -- Comments on SFEIR

Dear Friends,

Here's a fine idea: If the Wynn Casino is approved, I urge the MEPA and the Massachusetts Gaming Commission to require Wynn Resorts to fund the *full* design and construction of a pedestrian and bicycle bridge across the Mystic River from Everett to Somerville. This would make a smart environmental mitigation condition for the proposed casino and hotel, and it especially would help mitigate the terrible traffic that so many of us in Somerville fear.

Wynn Resorts has proposed allocating a mere $250,000 for similar purposes. That's not enough: this design has already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0) and it is estimated to cost about $6 million total.

Please require Wynn Resorts to fund the ENTIRE project. They will take many times more than this out of the area *each year* once they open, and congratulations to them. Funding this project to reduce traffic and improve the quality of life in the region is the least they can do.

Thank you.

Respectfully,
Ryan "Fritz" Holznagel
25 Willoughby Street #1
Somerville, MA 02143
617-538-5305

Canaday, Anne (EEA)

From: Michelle Moon [michelle.moon1@googlemail.com]
Sent: Monday, March 30, 2015 9:40 AM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,

--

Michelle Moon
215 Summer St
Somerville, MA 02143

Canaday, Anne (EEA)

From: Willett, Walter C. [wwillett@hsph.harvard.edu]
Sent: Monday, March 30, 2015 5:28 PM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn bike/ped Mystic crossing

TO: anne.canaday@state.ma.us, Jamie.Ennis@state.ma.us

From: Walter Willett

RE: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,

Walter Willett, MD
72 Chestnut ST.
Cambridge, MA
02139

Canaday, Anne (EEA)

From: Michelle Moon [michelle.moon1@googlemail.com]
Sent: Monday, March 30, 2015 9:40 AM
To: Canaday, Anne (EEA); Ennis, Jamie (MGC)
Subject: Wynn Casino EEA# 15060, Comments on SFEIR for Wynn Everett Casino

To Secretary Beaton and Chairman Crosby:

If the Wynn Casino is approved, I urge that MEPA and the Massachusetts Gaming Commission require Wynn Resorts to fund the full design and construction of a pedestrian and bicycle connection across the Mystic River from Everett to Somerville as an environmental mitigation condition for permitting the proposed casino and hotel development in Everett.

Wynn Resorts has proposed allocating $250,000 to the DCR for "planning and engineering services related to an investigation of a potential bike/ped bridge crossing. But this design had already been done (https://www.dropbox.com/s/l1p2z14d7wfqvfm/2009MysticRiverCrossing.pdf?dl=0

Instead, however the Wynn Resorts should be required to fund both crossing's full design and construction, which the report estimates would cost approximately $6 million, or less than half of 1% of the casino's project cost.

Thank you.

Respectfully,

--

Michelle Moon
215 Summer St
Somerville, MA 02143

Appendix A

Distribution List

APPENDIX A: DISTRIBUTION LIST

STATE AGENCIES AND GOVERNMENT ORGANIZATIONS

Secretary of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

MassDEP
Commissioner's Office
One Winter Street
Boston, MA 02108

MassDEP Northeast Regional Office
Attn: Environmental Reviewer
205B Lowell Street
Wilmington, MA 01887

MassDEP, Waterways Program
Attn: Ben Lynch
One Winter Street
Boston, MA 02108

MassDEP
Attn: Mr. Gary Moran
One Winter Street
Boston, MA 02108

Massachusetts Historical Commission
Attn: Brona Simon, Executive Director
220 Morrissey Boulevard
Boston, MA 02125

Massachusetts Department of Transportation
Neil Boudreau
State Traffic Engineer
Traffic Operations 7th floor
10 Park Plaza
Boston MA 02116

Massachusetts Department of Transportation
Stanley Wood, P.E.
Highway Design Engineer
Highway Design, 6th floor
10 Park Plaza
Boston MA 02116

Massachusetts Department of Transportation
Public Private Development Unit
Attn: Lionel Lucien
Room 4150
Ten Park Plaza
Boston, MA 02116

Massachusetts Department of Transportation
Attn: David J. Mohler, Executive Director
Office of Transportation Planning
Ten Park Plaza, Suite 4160
Boston, MA 02116

MassDOT– Highway Division District #4
Attn: Environmental Reviewer
519 Appleton Street
Arlington, MA 02476

Metropolitan Area Planning Council
Attn: Marc Draisen, Executive Director
60 Temple Place, 6th floor
Boston, MA 02111

Office of Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston, MA 02114

Massachusetts Department of Conservation and Recreation
Division of Urban Parks
Attn: MEPA Coordinator
251 Causeway Street, Suite 600
Boston MA 02114

Massachusetts Department of Conservation and Recreation
Attn: Carol Sanchez, Commissioner
251 Causeway Street, Suite 600
Boston, MA 02114

Massachusetts Division of Marine Fisheries
Attn: Paul J. Diodati
251 Causeway Street, Suite 400
Boston, MA 02114

Massachusetts Bay Transportation Authority
Attn: Andrew Brennan
10 Park Plaza, 6th Floor
Boston, MA 02116-3966

Massachusetts Gaming Commission
Attn: John Ziemba
84 State Street, 10th Floor
Boston, MA 02109

Board of Underwater Archaeological Resources
Attn: Victor T. Mastone, Director
251 Causeway Street, Suite 800
Boston, MA 02114

Massachusetts Department of Energy Resources
Attn: John Ballam, Manager of Engineering & CHP Program
100 Cambridge Street, Suite 1020
Boston, MA 02114

Massachusetts Port Authority
Attn: James Doolin, Chief Development Officer
One Harborside Drive, Suite 200S
East Boston, MA 02128

Massachusetts Water Resources Authority
Attn: Marianne Connolly, Senior Program Manager, Environmental Review and Compliance
100 First Avenue
Charlestown, MA 02129

Massachusetts Water Resources Authority
Attn: MEPA Coordinator
100 First Avenue
Charlestown, MA 02129

CITY OF EVERETT

Office of the Mayor
Attn: Melissa Murphy Rodrigues, Chief of Staff
Everett City Hall
484 Broadway, Room 31
Everett, MA 02149

Everett Dept. of Planning & Development
Attn: Tony Sousa
Everett City Hall
484 Broadway, Room 25
Everett, MA 02149

Everett Conservation Commission
Attn: Jon Norton, Chairman
Everett City Hall
484 Broadway, Room 40
Everett, MA 02149

Everett Public Health Department
Everett City Hall
484 Broadway, Room 20
Everett, MA 02149

Everett Department of City Services
Everett City Hall
484 Broadway
Everett, MA 02149

OTHER MUNICIPALITIES

City of Boston

Martin J. Walsh, Mayor
One City Hall Square, 5th Floor
Boston, MA 02201

Salvatore LaMattina
Boston City Councilor
1 City Hall Plaza
Boston, MA 02201

Boston Redevelopment Authority
Attn: MEPA Reviewer
1 City Hall Plaza
Boston, MA 02201

Boston Parks and Recreation Department
Attn: Christopher Cook
1010 Massachusetts Avenue
Boston, MA 021 18

Boston Transportation Department
1 City Hall Plaza, Room 721
Boston, MA 02201

Boston Environment Department
Chief of Environment and Energy
1 City Hall Plaza, Room 603
Boston, MA 02201

Host Community Advisory Committee
1 City Hall Plaza
Boston, MA 02201

City of Chelsea

City Manager
City Hall, Room #302
500 Broadway
Chelsea, MA 02150

City of Malden

Gary Christenson, Mayor
200 Pleasant Street, Room 627
Malden, MA 02148

City of Somerville

Department of Strategic Planning and Community Development
Somerville City Hall
93 Highland Avenue
Somerville, MA 02143

Mayor Joseph Curtatone
Somerville City Hall
93 Highland Avenue
Somerville, MA 02143

Bruce M. Desmond, Alderman at Large
220A Summer St.
Somerville, MA 02143
617 594-8347

City of Medford

Office of Community Development
Attn: Lauren DiLorenzo, Director
Ci ty Hall, Room 308
85 George P. Hassett Drive
Medford, MA 02155

Department of Public Works
Attn: Commissioner
City Hall, Room 304
85 George P. Hassett Drive
Medford, MA 02155

Mayor Michael McGlynn
Rooms 202-204, City Hall
85 George P. Hassett Drive
Medford, MA 02155

Medford Office of Energy & Environment
Attn: Alicia Hunt, Director
City Hall Room 205
85 George P. Hassett Drive
Medford, MA 02155

City of Medford Police Department
Attn: Leo A. Sacco, Jr., Chief of Police
100 Main Street
Medford, Massachusetts 02155

City of Medford Fire Department
Attn: Frank A. Giliberti, Jr., Chief
120 Main Street
Medford, MA 02155

City of Revere

Mayor Daniel Rizzo
281 Broadway
Revere, MA 02151

Department of Planning and Community Development
Attn: Frank Stringi, Director
281 Broadway
Revere, MA 02151

City of Melrose

Mayor Robert J. Dolan
562 Main Street
Melrose, MA 02176

ELECTED OFFICIALS

Senator Sal N. DiDomenico
State House Room 218
Boston, MA 02133

Representative Wayne A. Matewsky
State House Room 540
Boston, MA 02133
Representative Marjorie Decker
State House Room 437
Boston, MA 02133

Representative David M. Rogers
State House Room 134
Boston, MA 02133

Representative Timothy J. Toomey
State House Room 238
Boston, MA 02133

Representative Eugene L. O'Flaherty
State House Room 136
Boston, MA 02133

Senator Anthony Petruccelli
State House Room 424
Boston, MA 02133

Representative Carlo P. Basile
State House Room 174
Boston, MA 02133

Representative Christopher G. Fallon
State House Room 236
Boston, MA 02133

Representative Paul A. Brodeur
State House Room 43
Boston, MA 02133

Senator Katherine Clark
State House Room 410
Boston, MA 02133

Representative Carl M. Sciortino, Jr
State House Room 472
Boston, MA 02133

Representative Denise Provost
State House Room 473B
Boston, MA 02133

Senator Patricia Jehlen
State House Room 543
Boston, MA 02133

Congressman Michael E. Capuano
110 First Street
Cambridge, MA 02141

Representative Kathi-Anne Reinstein
State House Room 481
Boston, MA 02133

ORGANIZATIONS

Bike to the Sea. Inc.
Attn: Stephen Winslow
83 Jacob Street
Malden, MA 02148

Boston Harbor Islands Alliance
Attn: Jane Ellis, VP for Operations
15 State Street, Suite 1100
Boston, MA 02109

Mass Audubon
Attn: Christina McDermott, Assistant to the Director of Public Policy & Government Relations
6 Beacon Street, Suite 1025
Boston, MA 02108

Charlestown Mothers Association
Attn: Jennifer Rossi, Co-President
Jennifer Rossi [jennifer.m.rossi@gmail.com]

Charlestown Waterfront Coalition
P.O. Box 290533
Charlestown, Massachusetts 02129

Charlestown Neighborhood Council
Attn: Mark Rosenshein
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Charlestown, MA 02129
markrosenshein@comcast.net

Gardens for Charlestown, Inc.
P.O. Box 290044
Charlestown, MA 02129

Columbia Design Group
jshipe@columbiadesigngroup.com

Charlestown Preservation Society Design Review Committee
P.O. Box 290201
Charlestown, MA 02129

Boston Harbor Alliance
jellis@islandalliance.org

Everett Teacher's Association
40 Woodward Street
Everett. MA 02149

Mystic River Watershed Association
Attn: EkOngKar Singh Khalsa, Executive Director
20 Academy Street, Suite 306
Arlington, MA 02476

Rutherford Corridor Improvement Coalition
Attn: William P. Lamb
rcic@rcic-charlestown.org

The Boston Harbor Association
Attn: Vivien Li, President
374 Congress Street, Suite 307
Boston, MA 02210

WalkBoston
Attn: Wendy Landman, Executive Director
45 School Street
Boston, MA 02108

Friends of City Square Park
Attn: Annette Tecce
P.O Box 290635
Charlestown, MA 02129
Massachusetts Oyster Project

DDR Corp.
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3300 Enterprise Parkway
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East Coast Greenway Alliance
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5315 Highgate Dr. Suite 105
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Somerville Bicycle Advisory Committee
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93 Highland Avenue
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Melrose Pedestrian and Bicycle Advisory Committee
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Rutherford Avenue/Sullivan Square Advocacy Group
P.O. Box 290535
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Livable Streets Alliance
70 Pacific Street
Cambridge, MA 02139

Massachusetts Institute of Technology (MIT)
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77 Massachusetts Avenue
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Charleston Lofts Condominium Trust
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Everett, MA 02149

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Stephen Morin
210 Broadway Unit A406
Everett, MA 02149

Jeff Mullin
210 Broadway Unit 103
Everett, MA 02149

Mujahid Sait
210 Broadway Unit 403A
Everett, MA 02149

John Silverstone
210 Broadway Unit A206
Everett, MA 02149

Iva Blazina Vukelja
210 Broadway Unit A305
Everett, MA 02149

Jeanine Woodford
210 Broadway Unit 203
Everett, MA 02149

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43 Charlton Street
Building B-102
Everett, MA 02149

Alexander Colarusso
43 Charlton Street
Everett, MA 02149

Emily and Mark Stoehrer
210 Broadway Unit A108
Everett, MA 02149

Neil Allwood
210 Broadway Unit A201
Everett, MA 02149

Tea Huot
210 Broadway Unit A201
Everett, MA 02149

PUBLIC LIBRARIES

Parlin Memorial Library
410 Broadway
Everett, MA 02149

Shute Memorial Library
781 Broadway
Everett, MA 02149

Malden Public Library
36 Salem Street
Malden, MA 02148

Boston Public Library, Charlestown Branch
179 Main Street
Charlestown, MA 02129

Medford Public Library
111 High Street
Medford, MA 02155

Chelsea Public Library
569 Broadway
Chelsea, MA 02150

Somerville Public Library
79 Highland Avenue
Somerville, MA 02143

Appendix B

MBTA Land Transfer Documents

Southern Middlesex - 20/20 Perfect Vision i2 Document Detail Report

Current datetime: 3/4/2015 4:04:55 PM

Doc#	Document Type	Town	Book/Page	File Date	Consideration
1693043	EASEMENT			03/02/2015	

Property-Street Address and/or Description

BROADWAY

Grantors

WYNN MA LLC, EVERETT PROPERTY LLC, MASSCHUSETTS BAY TRANSPORTATION AUTHORITY

Grantees

References-Book/Pg Description Recorded Year

Registered Land Certificate(s)-Cert# Book/Pg

258475 01465/99

Plan 142
w/ Doc
cf. sheet 2

Dup
Rec

EASEMENT AGREEMENT

This Easement Agreement (this "Easement Agreement") is made as of the 27th day of February, 2015, by **WYNN MA, LLC**, a Nevada limited liability company, and **EVERETT PROPERTY, LLC**, a Massachusetts limited liability company, each having a place of business at 3131 Las Vegas Boulevard, South Las Vegas, NV 89109 (together, "Grantor") for the benefit of **MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts existing pursuant to Massachusetts General Laws, Chapter 161A, with a principal place of business at Ten Park Plaza, Boston, Massachusetts 02116 (the "MBTA").

Reference is made to the following facts:

A. MBTA is the owner of a certain parcel of land comprising the Everett Shops facility, 84 Broadway, Everett, Massachusetts ("MBTA's Property"), being a portion of the land described in Land Court Certificate of Title No. 23155 filed with the Southern Middlesex Land Registration District at Book 155, Page 33, as affected by Court Order dated January 16, 2004 deregistering the MBTA's Property, an attested copy of which is recorded with the Middlesex County Southern District Registry of Deeds (the "Registry") in Book 41791, Page 250. MBTA's Property is shown as "Parcel 4" on a plan (the "ANR Plan") entitled "Approval Not Required Plan, 84 Broadway, Everett, Mass.," prepared by Feldman Land Surveyors, dated January 7, 2014 and recorded herewith at the Registry.

Lot 1 and 3
on Land Court Plan
No. 9152-D
DE-REG
C

B. Wynn MA, LLC acquired certain land adjacent to the MBTA's Property by deed dated December 29, 2014 and recorded with the Registry in Book 64748, Page 556 and filed with the Middlesex County South Registry District of the Land Court as Document No. 1689280 with Certificate of Title No. 258475 and Everett Property, LLC acquired certain land adjacent to the MBTA's Property by deed dated February 18, 2015 and recorded with the Registry in Book 64926, Page 58 (together, "Grantor's Adjacent Land"). By deed of even date and recorded with the Registry herewith, Grantor has acquired from MBTA certain parcels of land identified as "Parcel 1," "Parcel 2" and "Parcel 3" on the ANR Plan (together with Grantor's Adjacent Land, "Grantor's Property").
See Property Exhibit attached GXC

C. Grantor desires to grant to the MBTA certain temporary and permanent easements over portions of Grantor's Property as more particularly set forth herein (such portions of Grantor's Property, collectively, the "Premises").

2015 01693043
Bk: 1465 Pg: 99 Cert#: 258475
Doc: EASE 03/02/2015 12:10 PM

258475

NOW, THEREFORE, for Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor hereby grants to the MBTA the following rights and easements, intended to be appurtenant to and to run with the MBTA's Property, subject to the provisions hereinafter set forth:

1. Temporary Access Easement: A non-exclusive easement in the land shown as "Parcel 1" on the ANR Plan ("Parcel 1") for the purpose of providing vehicular passage to the MBTA's Property for all purposes for which public ways are used in the City of Everett, Massachusetts consistent with the MBTA's use of Parcel 1 as of the date hereof (the "Temporary Easement"). The MBTA shall release the Temporary Easement at such time as Grantee, at Grantee's sole cost and expense, completes construction of functionally equivalent operational access from Lower Broadway to the MBTA's Property. For purposes of this Easement Agreement, "functionally equivalent operational access" requires Grantee's construction of (i) a public way accepted by the City of Everett connecting Lower Broadway to Everett Shops via a signalized intersection at Lower Broadway, and (ii) construction of a shared access driveway as further described in this Easement Agreement. Upon Grantee's provision of functionally equivalent operational access that is acceptable to the MBTA (such acceptance not to be unreasonably withheld, conditioned or delayed), the MBTA shall provide the Grantee with a recordable release which shall evidence the termination and release by the MBTA (for itself, and its predecessors, successors and assigns) of (i) such Temporary Access Easement in Parcel 1 and (ii) all rights and interests of the MBTA in, to, over and under the area now known as Horizon Way, except for the MBTA's right and easement for emergency access over such area as provided in Section 4 hereof.

2. Service Road Easement. Upon the completion of the Service Road as described in Section 5 below, Grantor hereby grants to the MBTA the non-exclusive right and easement for the MBTA, its employees, invitees, agents, licensees and permittees (collectively, the "MBTA Parties") to use the Service Road constructed by Grantor in the areas shown as the "General MBTA Access Area" and "Service Road Easement Area" on a plan entitled "Easement Plan of Land, 84 Broadway, Everett, Mass.," prepared by Feldman Land Surveyors, dated January 21, 2014, a reduced-size copy of which is attached hereto as Exhibit A (the "Easement Plan") and an original of which is recorded herewith, and more particularly described in Exhibit B hereto for vehicular access to the MBTA's Property subject to the following terms and conditions: (i) the MBTA Parties use shall be limited to vehicular access and shall be in common with the Grantor and its employees, invitees, agents, licensees and permittees; (ii) the portion of the Service Road in the Service Road Easement Area shall be used by the MBTA Parties for access by trucks and commercial vehicles, for such purposes as deliveries, maintenance and other functions of the Everett Shops facility, including buses, wreckers, trucks, vans and similar commercial vehicles, but excluding private passenger motor vehicles; (iii) the General MBTA Access Area shall be used for general vehicular access by MBTA Parties; and (iv) use of the Service Road shall be subject to reasonable rules and regulations which may be imposed by Grantor from time to time upon reasonable notice to the MBTA, provided such rules and regulations do not impose temporal access restrictions, require the MBTA to perform any repairs or maintenance of the Service Road and/or materially interfere with the MBTA's use of the Service Road for the intended purposes as set forth herein. Grantor shall be solely responsible for maintenance of the Service Road in good condition and in compliance with all applicable permits, approvals, laws, regulations and ordinances. For purposes hereof, such maintenance obligations shall include the

removal as reasonably necessary of ice and snow and other obstructions from the Service Road, trimming all shrubbery and plants as reasonably necessary to prevent interference with access to or egress from the Service Road, replacing damaged pavements and curbing as reasonably necessary, and maintaining, operating, repairing and replacing from time to time all appurtenances reasonably necessary to maintain the Service Road in a good condition suitable for access or egress.

3. Subsurface Utility Easement: A non-exclusive easement in Parcel 1 to maintain, repair and replace as needed any utility lines currently serving the MBTA's Property that are existing as of the date of this Easement Agreement in the locations where such utilities lines are currently located (the "Existing Utilities"). A non-exclusive easement in the land shown as "Parcel 2" on the ANR Plan ("Parcel 2") and the land shown as "Parcel 3" on the ANR Plan ("Parcel 3") for the installation, construction, operation, maintenance, repair and replacement of the utility lines, transmission lines, communications conduits, and related appurtenances (collectively, "Utility Facilities") by the MBTA or to third parties (under license from the MBTA); provided, however, the exercise such easement right with respect to Parcel 2 and Parcel 3 shall be subject to the Grantor's prior written consent, which consent shall not be unreasonably withheld, conditioned or delayed, provided further (i) it shall be reasonable for Grantor to withhold such consent if the MBTA's activities or any proposed Utility Facilities would, in Grantor's reasonable judgment, overburden the applicable area of the Premises or prohibit or materially impair Grantor's use of Parcel 2 or Parcel 3 for purposes of serving Grantor's Adjacent Land, and (ii) Grantor may impose reasonable conditions and restrictions on the MBTA's (or any such licensee's) use such area for such purposes so as to preserve Grantor's ability to use Parcel 2 and Parcel 3 for purposes of serving Grantor's Adjacent Land. The following provisions shall also apply to the exercise of any of the MBTA's rights hereunder with respect to Existing Utilities and Utility Facilities: (i) the MBTA shall provide Grantee with reasonable prior notice of any proposed entry (x) onto Parcel 1 for construction activities related to the exercise of the MBTA's rights hereunder with respect to the Existing Utilities or (y) onto Parcel 2 or Parcel 3 for construction activities related to the exercise of the MBTA's rights hereunder with respect to the Utility Facilities after obtaining the Grantors' consent thereto as provided herein; (ii) the operation, maintenance repair or replacement of the Existing Utilities and Utility Facilities shall be conducted with reasonable effort to minimize interference with the Grantee's use and operation of the Premises and the Grantee's Adjacent Land; (iii) the MBTA shall promptly repair any damage or disturbance to the Premises or Grantee's real property caused by the MBTA's activities and restore such Premises or real property to substantially its former condition; (iv) the MBTA shall defend, indemnify and hold harmless the Grantor from and against any claim, cause of action, loss, cost, damage, liability or expense (including reasonable attorney's or other professional's fees, costs and expenses) for personal injury or property damage resulting from or arising out of the exercise of the MBTA's rights hereunder, including third party claims for personal injury or property damage, except to the extent caused by the negligence or willful misconduct of Grantor, its officers, employees, agents and licensees. Grantor shall have the right to reasonably relocate the Existing Utilities and Utility Facilities or any part thereof at Grantor's sole cost and expense, provided that the specific location and layout of the resulting easement area shall be subject to review and approval of the MBTA (which approval shall not be unreasonably withheld, conditioned or delayed).

4. Emergency Access Easement. Grantor hereby grants to the MBTA the non-exclusive right and easement for the MBTA Parties and state and local police, fire and safety personnel to use the roadway system on Grantor's Adjacent Land and the area shown as "Emergency Access Easement" on the Easement Plan and more particularly described in Exhibit C hereto (collectively, the "Emergency Easement Area") for such vehicular access as may be necessary for the purposes of ingress or egress in the event of a fire or other emergency occurring on the MBTA's Property. Such emergency access over Grantor's Adjacent Land shall be over the service and entry roadway system on Grantor's Adjacent Land, as it exists from time to time, directly to Lower Broadway (Grantor reserving the right to modify, relocate and change such service areas, access and roadways on Grantor's Adjacent Land in Grantor's sole discretion). In the event of an emergency on the MBTA's Property requiring the MBTA's use of such emergency access which is not a public safety (e.g, fire or police) emergency, the MBTA shall provide such advance notice of emergency use to Grantor's on-site personnel as is reasonable and expedient under the circumstances and coordinate such use with Grantor. Any such emergency access use shall be limited to the shortest time that is reasonably feasible and conducted with reasonable effort to minimize interference with the Grantor's use and operation of the Premises and Grantors' Adjacent Land to the extent practicable.

5. Grantor to Construct Service Road. Grantor shall be responsible, at its expense, for the installation and construction of an improved surface roadway within the General MBTA Access Area and Service Road Easement Area (the "Service Road") for the mutual use of Grantor and the MBTA (subject to the terms hereof) pursuant to a certain License Agreement between the Grantor and the MBTA, which License Agreement (i) shall be in a form substantially consistent with the MBTA's standard License for Entry, (ii) shall provide the MBTA with the right to review and approve the Grantor's plans, specifications and construction schedule for the Service Road (which approval shall not be unreasonably withheld, conditioned or delayed), and (iii) shall allow Grantor and its employees, contractors and agents reasonable access to and over the MBTA's Property for the purpose of constructing the Service Road, subject to such conditions as the MBTA determines necessary or appropriate to ensure Grantor's activities do not materially interfere with MBTA operations.

6. Removal of MBTA's Personal Property from Premises. Upon not less than ninety (90) days prior written notice to MBTA, the MBTA agrees to remove from the Premises the work trailer, personal property, vehicles and equipment, refuse, trash and debris.

7. Easements Run with the Land. The rights granted in the Premises are appurtenant to and for the benefit of the MBTA's Property and may be used by the owners of the MBTA's Property, their successors, assigns, employees, invitees, agents, licensees, and permittees.

8. Invalid Provisions. The invalidity of any covenant, restriction, condition, limitation or any other part or provision of this Easement shall not impair or affect in any manner the validity, enforceability or effect of the rest of the Easement.

9. Counterparts. This Easement Agreement may be executed in counterparts, which together shall constitute a single binding agreement.

10. Governing Law. This Easement Agreement shall be governed by the laws of the Commonwealth of Massachusetts.

11. Amendments. The terms and provisions herein contained may be amended only by a duly recorded instrument in writing executed by the then holder of record title to each estate affected by such amendment.

12. Authority. Grantor represents and warrants that it has the full power and authority to grant this Easement Agreement.

13. Subordination of Liens. Grantor represents and warrants that it has not granted any mortgage or permitted any liens to exist upon the Premises, the exercise of rights pursuant to which would materially interfere with the exercise or terminate the MBTA's rights hereunder.

[Remainder of Page Intentionally Left Blank. Signatures Follow.]

This Easement Agreement is executed as of the date first above written.

WYNN MA, LLC

By:_____

Name: ROBERT J. DESALVIO

Title: PRESIDENT

Hereunto Duly Authorized

Commonwealth of Massachusetts

Suffolk, ss

On the 27th day of FEBRUARY, 2015, before me, the undersigned notary public, personally appeared Robert DeSalvio, proved to me through satisfactory evidence of identification, which was personally known to me, to be the person whose name is signed on the preceding document, and acknowledged to me that s/he signed it voluntarily for its stated purpose as PRESIDENT of Wynn MA, LLC.

Mary Ellen Winn

Notary Public

MARY ELLEN WINN
Notary Public
Commonwealth of Massachusetts

[Signatures continue on next page.]

EVERETT PROPERTY, LLC

By: _____
Name: DANIEL O GAGUIN
Title: AUTHORIZED SIGNATORY
Hereunto Duly Authorized

Commonwealth of Massachusetts

Suffolk, ss

On the 27th day of FEBRUARY, 2015, before me, the undersigned notary public, personally appeared Daniel Gaguin, proved to me through satisfactory evidence of identification, which was personally known to me, to be the person whose name is signed on the preceding document, and acknowledged to me that s/he signed it voluntarily for its stated purpose as authorized signatory of Everett Property, LLC.

Mary Ellen Winn
Notary Public

MARY ELLEN WINN
Notary Public
Commonwealth of Massachusetts
My Commission Expires May 20, 2017

[Signatures continue on next page.]

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

By: _____
Beverly A. Scott, Ph.D.
General Manager and Rail & Transit Administrator

By: _____
Stephanie Pollack
Secretary & Chief Executive Officer
Massachusetts Department of Transportation

Approved as to form:

By: _____
Paige Scott Reed
General Counsel, MassDOT and MBTA

Commonwealth of Massachusetts

Suffolk, ss

On the 26th day of February, 2015, before me, the undersigned notary public, personally appeared Beverly A. Scott, Ph.D., proved to me through satisfactory evidence of identification, which was my personal knowledge of the said Beverly A. Scott, Ph.D., to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose as General Manager and Rail & Transit Administrator of the Massachusetts Bay Transportation Authority.

NANCY E. COTTER
MY COMMISSION EXPIRES
AUGUST 28, 2020
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

Notary Public August 28 2020

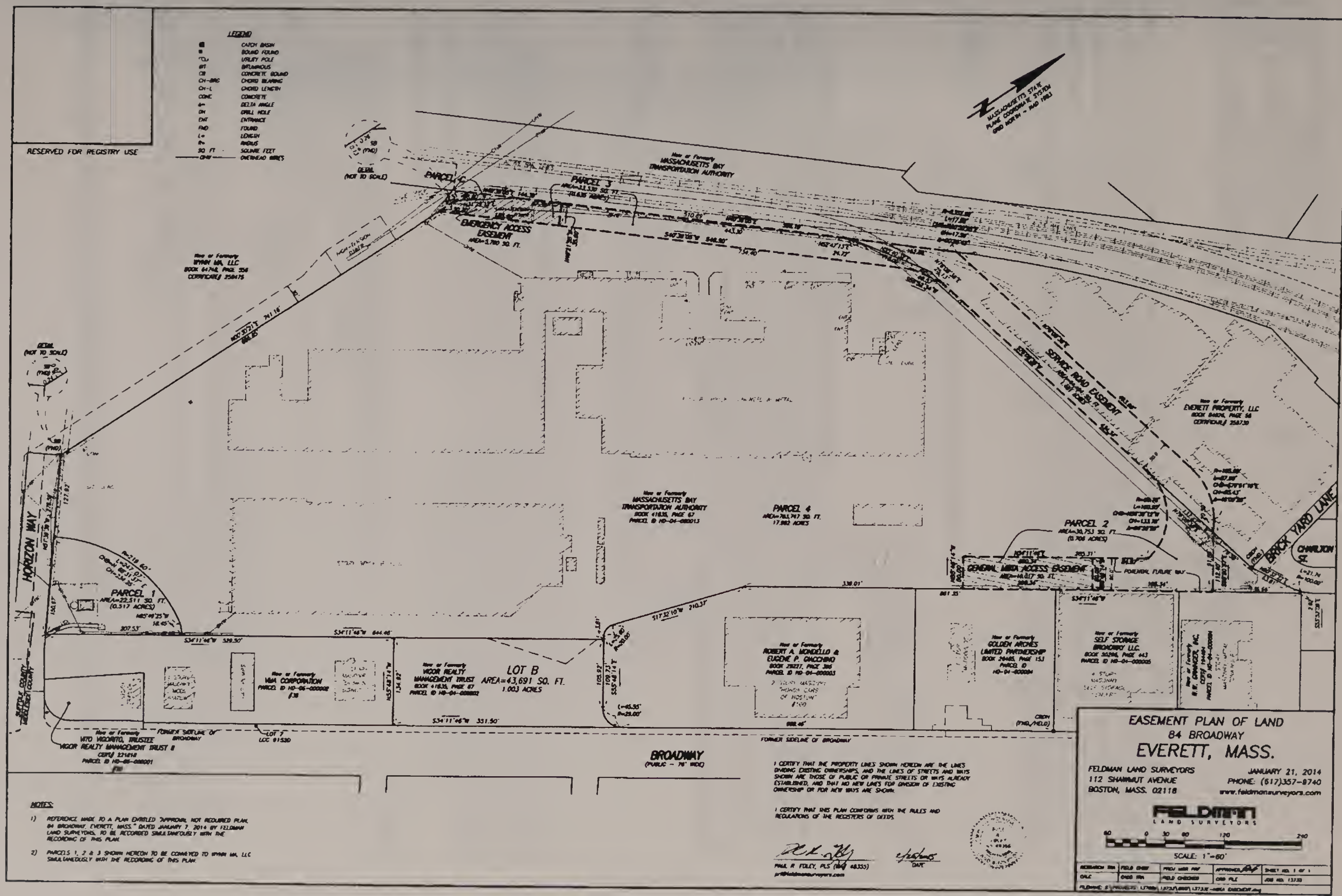
Commonwealth of Massachusetts

Suffolk, ss

On the 26th day of February, 2015, before me, the undersigned notary public, personally appeared Stephanie Pollack, proved to me through satisfactory evidence of identification, which was my personal knowledge of the said Stephanie Pollack, to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose on behalf of the Massachusetts Bay Transportation Authority as Secretary & Chief Executive Officer of the Massachusetts Department of Transportation.

Notary Public

CHERYL A. DUSTIN
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
March 12, 2021



LEGEND
CATCH BASIN
BOUND FOUND
UTILITY POLE
BITUMINOUS
CONCRETE BOUND
CHORD BEARING
CHORD LENGTH
CONCRETE
DELTA ANGLE
DRILL HOLE
ENTRANCE
FOUND
LENGTH
RADIUS
SQUARE FEET
OVERHEAD WIRES
RESERVED FOR REGISTRY USE
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM GRID NORTH - NAD 1983
PARCEL C
PARCEL 3
EMERGENCY ACCESS EASEMENT
AREA=5,780 SQ. FT.
New or Formerly MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
New or Formerly WYNN MA, LLC
SERVICE ROAD EASEMENT
New or Formerly EVERETT PROPERTY, LLC
PARCEL 4
PARCEL 2
GENERAL MBTA ACCESS EASEMENT
BRICK YARD LANE
CHARLTON ST.
HORIZON WAY
PARCEL 1
AREA=22,511 SQ. FT.
(0.517 ACRES)
LOT B
AREA=43,691 SQ. FT.
1.003 ACRES
New or Formerly VIGOR REALTY MANAGEMENT TRUST
New or Formerly VMA CORPORATION
New or Formerly ROBERT A. MONDELLO & EUGENE P. GIACCHINO
New or Formerly GOLDEN ARCHES LIMITED PARTNERSHIP
New or Formerly SELF STORAGE BROADWAY LLC
New or Formerly VITO VIGORITO, TRUSTEE VIGOR REALTY MANAGEMENT TRUST II
FORMER SIDELINE OF BROADWAY
BROADWAY
(PUBLIC - 76' WIDE)
NOTES:
1) REFERENCE MADE TO A PLAN ENTITLED "APPROVAL NOT REQUIRED PLAN, 84 BROADWAY, EVERETT, MASS." DATED JANUARY 7, 2014 BY FELDMAN LAND SURVEYORS, TO BE RECORDED SIMULTANEOUSLY WITH THE RECORDING OF THIS PLAN.
2) PARCELS 1, 2 & 3 SHOWN HEREON TO BE CONVEYED TO WYNN MA, LLC SIMULTANEOUSLY WITH THE RECORDING OF THIS PLAN.
I CERTIFY THAT THE PROPERTY LINES SHOWN HEREON ARE THE LINES DIVIDING EXISTING OWNERSHIPS, AND THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED, AND THAT NO NEW LINES FOR DIVISION OF EXISTING OWNERSHIP OR FOR NEW WAYS ARE SHOWN.
I CERTIFY THAT THIS PLAN CONFORMS WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.
PAUL R. FOLEY, PLS
DATE
EASEMENT PLAN OF LAND
84 BROADWAY
EVERETT, MASS.
FELDMAN LAND SURVEYORS
112 SHAWMUT AVENUE
BOSTON, MASS. 02118
JANUARY 21, 2014
PHONE: (617)357-8740
www.feldmansurveyors.com
FELDMAN LAND SURVEYORS
SCALE: 1"=60'

Exhibit B

Legal Description of Access Easement Area

SERVICE ROAD EASEMENT AREA

A CERTAIN EASEMENT PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE TERMINUS OF THE NORTHWESTERLY SIDELINE OF HORIZON WAY, THENCE RUNNING N 00°30'21" E, A DISTANCE OF 741.16 FEET TO A POINT;

THENCE TURNING AND RUNNING N 40°38'05" E, A DISTANCE OF 144.39 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 40°38'05" E, A DISTANCE OF 596.19 FEET TO A POINT;

THENCE RUNNING, BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 2352.99 FEET, AN ARC LENGTH OF 17.59 FEET, A CHORD BEARING OF N 40°50'55" E AND A CHORD DISTANCE OF 17.59 FEET TO A POINT;

THENCE TURNING AND RUNNING N 76°08'36" E, A DISTANCE OF 493.98 FEET TO A POINT;

THENCE RUNNING BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 105.00 FEET, AN ARC LENGTH OF 87.98 FEET, A CHORD BEARING OF S 79°51'10" E AND A CHORD DISTANCE OF 85.43 FEET TO A POINT;

THENCE TURNING AND RUNNING S 55°50'57" E, A DISTANCE OF 112.40 FEET TO A POINT;

THENCE TURNING AND RUNNING S 34°11'46" W, A DISTANCE OF 185.34 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°48'14" W, A DISTANCE OF 50.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 34°11'46" E, A DISTANCE OF 84.97 FEET TO A POINT;

THENCE RUNNING BY A CURVE TO THE LEFT, HAVING A RADIUS OF 89.76 FEET, AN ARC LENGTH OF 150.95 FEET, A CHORD BEARING OF N 56°38'12" W AND CHORD DISTANCE OF 133.78 FEET TO A POINT;

THENCE TURNIGN AND RUNNING S 76°08'36" W, A DISTANCE OF 434.34 FEET TO A POINT;

THENCE TURNING AND RUNNING S 56° 52'34" W, A DISTANCE OF 49.57 FEET TO A POINT;

THENCE TURNING AND RUNNING S 40°38'05' W, A DISTANCE OF 548.50 FEET TO A POINT;

THENCE TURNING AND RUNNING N 49°21'55" W, A DISTANCE OF 35.00 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 64,494 SQUARE FEET, OR 1.481 ACRES.

GENERAL MBTA ACCESS AREA

A CERTAIN EASEMENT PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A CONCRETE BOUND WITH A DRILL HOLE AT THE TERMINUS OF THE SOUTHWESTERLY SIDELINE OF BRICK YARD LANE;

THENCE RUNNING N 60°32'22" E, A DISTANCE OF 63.81 FEET TO A POINT;

THENCE RUNNING BY A CURVE TO THE LEFT, HAVING A RADIUS OF 100.00 FEET AND AN ARC LENGTH OF 21.74 FEET TO A POINT;

THENCE TURNING AND RUNNING S 55°52'08" E, A DISTANCE OF 2.92 FEET TO A POINT;

THENCE RUNNING S 34°11'46" W, A DISTANCE OF 322.00 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING S 34°11'46" W, A DISTANCE OF 200.34 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°48'14" W, A DISTANCE OF 50.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 34°11'46" E, A DISTANCE OF 200.34 FEET TO A POINT;

THENCE TURNING AND RUNNING S 55°48'14" E, A DISTANCE OF 50.00 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 10,017 SQUARE FEET.

EXHIBIT C

Legal Description of Emergency Easement Area

A CERTAIN EASEMENT PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE TERMINUS OF THE NORTHWESTERLY SIDELINE OF HORIZON WAY, THENCE RUNNING N 00°30'21" E, A DISTANCE OF 686.85 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 00°30'21" E, A DISTANCE OF 54.31 FEET TO A POINT

THENCE TURNING AND RUNNING N 40°38'05" E, A DISTANCE OF 144.39 FEET TO A POINT;

THENCE TURNING AND RUNNING S 49°21'55" E, A DISTANCE OF 35.00 FEET TO A POINT;

THENCE TURNING AND RUNNING S 40°38'05" W, A DISTANCE OF 185.90 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 5,780 SQUARE FEET.

Wynn MA, LLC property:

See Doc

EXHIBIT A

DESCRIPTION OF THE PROPERTY

A certain parcel of registered and unregistered land situated on the westerly, southwesterly and northerly side of Horizon Way (also known as Chemical Lane) in the City of Everett, in the County of Middlesex, Commonwealth of Massachusetts, shown on a plan entitled "Compiled Plan of Land in Everett & Boston, MA (Middlesex & Suffolk County)" dated January 14, 1983 by Miller & Nylander Co., a division of Boston Survey Consultants, Inc., and recorded with Middlesex South District Registry of Deeds in Book 15083, Page 253, as Plan No. 696 of 1983 (B, C & D of 4), and bounded and described according to the plan as follows:

Beginning at a point in the easterly sideline formerly of the Boston and Albany Railroad (now of Consolidated Rail Corporation) at the most southerly corner of land now or formerly of Massachusetts Bay Transportation Authority; thence turning and running

SOUTH 09° 12' 52" East	96.60 feet to a point; thence
SOUTH 40° 07' 44" East	717.15 feet to a stone bound, the first two courses by land of Massachusetts Bay Transportation Authority; thence
SOUTH 02° 17' 44" East	24.75 feet to a point; thence
NORTH 87° 42' 16" East	255.05 feet to a point, the last two courses by a portion of Chemical Lane; thence
SOUTH 06° 07' 06" East	partly by a portion of Chemical Lane and partly by land of Massachusetts Bay Transportation Authority, 1300.00 feet to a point; thence
SOUTH 83° 52' 54" West	264.50 feet to a point; thence
SOUTH 06° 07' 06" East	about 625 feet to the Mystic River, the last two courses by land of Massachusetts Bay Transportation Authority; thence
NORTHWESTERLY	by the Mystic River about 820 feet to a point in the easterly sideline of the Boston and Albany Railroad land; thence
NORTH 00° 00' 00" East	by land formerly of the Boston and Albany Railroad about 2,317 feet to the point of beginning.

There is included within the parcel described above the following parcel of unregistered land:

That certain parcel of land situated southerly of, but not abutting, Chemical Lane, in Everett, Middlesex County, Massachusetts, containing 86,134.1 square feet, bounded and described, according to the plan hereinafter referred to, as follows:

NORTHWESTERLY	three hundred twenty-six and 90/100 (326.90) feet;
NORTHEASTERLY	two hundred eighteen and 19/100 (218.19) feet;
SOUTHEASTERLY	forty-three and 21/100 (43.21) feet;
NORTHEASTERLY	again one hundred ten and 50/100 (110.50) feet;
SOUTHEASTERLY	again ninety-five (95.00) feet;
SOUTHWESTERLY	ninety and 50/100 (90.50) feet;
SOUTHEASTERLY	again one hundred thirty-seven and 50/100 (137.50) feet;
SOUTHWESTERLY	again two hundred thirteen (213.00) feet;
SOUTHEASTERLY	again forty (40.00) feet; and
SOUTHWESTERLY	again one hundred and 16/100 (100.16) feet.

All of said courses and distances being by registered land of FBT Everett Realty, LLC referenced below under Certificate of Title No. 245156, filed in the Middlesex South Registry District of the Land Court in Registration Book 1375, Page 146.

The above-described parcel of unregistered land is shown on a plan entitled "Plan of Monsanto Company's Unregistered Land, Everett, Mass." signed by John W. Mich, Registered Land Surveyor, dated December 21, 1982, and recorded with Middlesex South District Registry of Deeds in Book 15083, Page 253, as Plan No. 696 of 1983 (A of 4).

There are included within the perimeter of the parcel first described above, the following parcels of REGISTERED LAND, designated by parcel letter, shown on plans and covered by the certificates of title listed below:

Parcel Page	Number	Registry District	Certificate	Book-
B**	18691A	Middlesex South	No. 245156	1375-146
(Lot) C	9152B	Middlesex South	No. 245156	1375-146

** Parcel B on Plan No. 18691A in Plan Book 485, Page 177 (excepting and excluding from said Parcel B a Parcel shown as "New England Alcohol Company").

There is excluded from the above described property the land in Boston, Suffolk County, shown as Lot C on Plan Number 18691A filed with the Suffolk County Registry District of the Land Court, Certificate No. 53765, Book 264, Page 165.

35409583v.2

Case
See Doc
Desc
Case
out County

Doc 01693043

Southern Middlesex LAND COURT
Registry District

RECEIVED FOR REGISTRATION

On: Mar 02,2015 at 12:10P

Document Fee 75.00

Receipt Total: $300.00

NOTED ON: CERT 258475 BK 01465 PG 99

ALSO NOTED ON:

Memoranda Of Encumbrances

Cert No: 258475

Book/Page: 01465/99

Cert No	258475
Document Number	1693040
Kind	CERTIFICATE
In Favor of	
Date of Instr	
Terms	
Date of Reg	03/02/2015
Time of Reg	12:10PM

Cert No	258475
Document Number	1693041
Kind	CERTIFICATE
In Favor of	
Date of Instr	
Terms	
Date of Reg	03/02/2015
Time of Reg	12:10PM

Cert No	258475
Document Number	1693042
Kind	CERTIFICATE
In Favor of	
Date of Instr	
Terms	
Date of Reg	03/02/2015
Time of Reg	12:10PM

Cert No	258475
Document Number	1693043

Kind	EASEMENT
In Favor of	
Date of Instr	
Terms	
Date of Reg	03/02/2015
Time of Reg	12:10PM

Cert No	
Document	
Number	
Kind	
In Favor of	
Date of Instr	
Terms	
Date of Reg	
Time of Reg	

State Publications and Regulations

William Francis Galvin, Secretary of the Commonwealth

The following Real Property submission was successfully received.

Planned date of publish is 9/3/2014

Awarding Agency			
Agency Name and Address:	Massachusetts Bay Transportation Authority (MBTA), by its designated representative Massachusetts Realty Group, 20 Park Plaza, Suite 1120, Boston, MA 02116		
Project Number:			
Proposal Deadline Date:	10/03/2014	Time:	11:00 AM

Contact Information			
Name:	Thomas Cox		
Phone:	(617) 316-1670	Fax	
Email Address:	tcox@greyco.com Notify email address listed when final publish date assigned.		

Contract Information	
Transaction Terms:	Acquisition: **Not Chosen** Disposition: **Sale**
Project:	The MBTA has received an offer to purchase certain property located off of Lower Broadway, Everett, Massachusetts (consisting of 3 parcels of land with an aggregate area of approximately 2.0 acres) for cash consideration of $6,000,000 and additional consideration of the construction of access drive and traffic signalization improvements benefiting the MBTA's adjacent land. Any person wishing to exceed the offer that has been received shall submit a sealed proposal to Massachusetts Realty Group, the MBTA's designated representative, in accordance with requirements set forth in a Notice of Proposal and Request for Response (RFR).
Estimated Value, Source of Valuation	A qualifying higher proposal is one that raises the total consideration (combined cash and non-cash consideration) to be received by the MBTA in connection with the sale.

Additional Information	**The RFR is available at www.mbtarealty.com or by contacting: Massachusetts Realty Group, 20 Park Plaza, Suite 1120, Boston, MA 02116, Attention: Thomas Cox, tcox@greyco.com, (617) 316-1670. A qualifying higher proposal must be accompanied by a deposit of certified funds in the amount of 25% of the cash consideration of the bid. Proposals may be subject to a best and final offer process. Any questions concerning the RFR should be addressed in writing to Thomas Cox of Massachusetts Realty Group at the address noted above.**

This page can be printed for your records.

Add Another | Return To Menu

Kathy Caple booksigning at Parlin Library

Night at the Zoo is the latest book by Kathy Caple, Children's Librarian at the Shute Library. Join us for a booksigning Monday, Sept. 22 at 6:30 P.M. at the Parlin Library Meeting Room. This is Ms. Caple's 18th book and is published by Holiday House as a part of their I Like to Read series.

A native of Longview, Washington, Kathy Caple studied art and writing at the University of Washington and Library Science at the University of Rhode Island. She worked at the Watertown Free Public Library before she became the Children's Librarian at the Shute Library almost ten years ago. Recently, she has been working on plans for the new Children's Room at the renovated Shute Library and is looking forward to its re-opening.

Ms. Caple will make a presentation on the creative process for writing and illustrating children's books and autograph copies of newly purchased or already owned copies of her books. Hardcover copies of Night at the Zoo or Duck & Company will be available for $11 from the Friends of the Everett Libraries; and the paperback Duck & Company will be available for $4. After the program there will be a drawing for a free book and refreshments.

Kathy Caple

MGC // CONTINUED FROM PAGE 1

is to make sure that the process is flexible and be able to take different steps along the way if you need it.

Commissioner Jim McHugh agreed that the target date should remain, but there should be flexibility to go longer.

"That's really an important point," McHugh said. "We've said and maintain that we're starting on the 8th. We are starting on the 8th, and we said we are finishing on the 12th. We are going to make the award on the 12th. We will try to do that. But if we don't do that because we are trying to make sure that we get the best result for the Commonwealth, we will continue with perhaps pauses to have these back and forths with the applicants straightforward until we do finish them. If that takes a few extra days, so be it. But the object is to ensure that we have a fair transparent process that results in the best - in the best bargaining for the Commonwealth, and this is designed to assist us in doing that."

The Commission will begin by making reports on four different areas of study.

First will be a return to the suitability discussions of all applicants – whether or not there have been any changes in status to applicants.

Then, after all the suitability discussions have been had, the Commission will move on to analyzing and rating each of the two proposals on the subjects of Building/Site Design and Finance.

The second set of discussions will be on the subjects of Mitigation and Economic Development.

The final discussion will be an overview of all four categories.

That will launch into what is expected to be a prolonged and potentially complicated process of adding conditions and correcting any errors made in the presentations.

The Commission will submit a series of questions and comments to each applicant and then put the meeting in recess.

That will allow the applicants to answer the questions and discuss the conditions.

That back and forth will continue until all have been satisfied.

No ratings will be discussed until the overview process.

Again, rather than an up or down vote on the two projects, there will be ratings for each project, with the license going to the project that has scored the best. With that in mind, a project may get favorable ratings, but if the ratings are eclipsed by the other project, the other project would be awarded the license.

Grant // CONTINUED FROM PAGE 1

using culturally and linguistically appropriate methods. The 2015 Open Enrollment period runs from Nov. 15 through Feb. 15, 2015.

The upcoming Open Enrollment period gives our members and new applicants the opportunity to find permanent coverage, and enjoy all of the benefits of the Affordable Care Act," said Jean Yang, the Executive Director of the Health Connector. "Our Navigators provide a valuable service by offering the kind of direct assistance members rely on and respond to best. These groups will be very visible throughout the state, and we look forward to working them throughout Open Enrollment."

Currently, nearly 400,000 people are in subsidized temporary MassHealth coverage or extended Health Connector coverage, or buy their insurance through the Health Connector without financial assistance. Those people will need to update their application information in the system during Open Enrollment in order to maintain insurance and avoid a gap in coverage.

Last week, the Commonwealth announced it would remain a state-based Marketplace this fall, with a new system that includes important member functionality, including automatically displaying the State Wrap benefit – which will include additional financial assistance above and beyond federal tax credits for many applicants who qualify for subsidized Health Connector plans.

In addition to the Navigator program, additional outreach, education and application efforts will include statewide programming operated by Health Care For All. A network of approximately 1,100 Certified Application Counselors, predominately at health-care provider locations, are also available to help applicants.

A contact list of Navigators and Counselors can be found at the Health Connector's website. Additionally, the Health Connector will be using direct mail and phone calls to current members, a series of public application-intake events, advertising, and other initiatives designed to increase awareness and encourage members to take immediate action.

Wynn // CONTINUED FROM PAGE 1

mit a formal proposal that the Authority would then post publicly for bid. The procurement process is now being conducted. Bidders are required to submit proposals that are the same as or better than the Wynn proposal."

Earlier in the casino process, access to the proposed Wynn site became a big deal as one access point would have to cross over Boston land. Wynn officials indicated at that time that they were in negotiations with the MBTA to create a plan that would eliminate the problem.

With the purchase of the MBTA land, Wynn would no longer have to use the access road that crosses over a narrow piece of Boston land near Martucho Scrap Metal.

THINK OF IT AS AN OWNER'S MANUAL FOR YOUR MONEY.

The free *Consumer Action Handbook* in print and online at ConsumerAction.gov. It's the everyday guide to getting the most for your hard earned money. For your free copy, order online at ConsumerAction.gov, write to Handbook, Pueblo, CO 81009, or call toll free 1 (888) 8 PUEBLO.

A public service message from the U.S. General Services Administration.

It is estimated that
1 out of 4 people over age 50 has a measurable hearing loss.

Present this ad on 9/13 for One FREE Hearing Screening.

Do you sometimes hear but not understand?
Do you have difficulty hearing television programs?
Has it been over 12 months since your last hearing test?
Do people seem to mumble?

If you answered yes to any of the above questions, then join us to have your hearing screened FREE!

This no obligation screening is by appointment only. *Please call 617 241 0328 to confirm your time.*

CALL TO SCHEDULE YOUR
FREE
HEARING SCREENING
SAT. 9/13
9-1:30PM
Zelma Lacey House
9 West School St
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Zelma Lacey House
Where life lights up with care!
ZelmaLaceyHouse.com

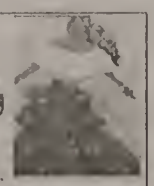
First Baptist Church
50 Church Street, Everett
781-640 5384
Facebook.com/firstbaptistchurch

PREACHING THE GOSPEL OF JESUS CHRIST

Sunday school at 9:30am
Sunday Morning Service 10:30am
Thursday Evening Service 7:00pm

GENTLY USED ITEMS FOR THOSE IN NEED.
Hearts and Hands Ministry
781-929-1053

Become Inspired,



Excited, Exhilarated, Stimulated, Encouraged, Delighted, Gladdened, Gratified, Overjoyed...

The EVERETT ARTS ASSOCIATION
offers drawing and painting instruction at
a reasonable fee.
Classes begin on September 22, 2014
Mondays 2:00 p.m. to 4:00 p.m.
at Everett City Hall - Lower Level
Must be over the age of 18
For more information or to request an application,
contact us at
email [illegible] or phone at 617-387-9024
An application is available online at [illegible]
Everett Arts Association, P.O. Box [illegible], Everett MA 02149

FROM THE MAYOR'S OFFICE

SENIOR SOCIAL SET FOR SEPTEMBER

Mayor Carlo DeMaria's Council on Aging has planned its next Senior Social for Wednesday, September 17th at 11:45AM at The Connolly Center. This month's social will feature pizza, salad and dessert. Music and dancing will be provided by a spectacular performance from "The Swingers."

Tickets will be available from September 8th - 12th from 10AM - 12PM at the Council on Aging Office, located in the Connolly Center, 90 Chelsea Street.

For more information contact Dale at 617-394-2323, or Ida at 617-394-2260.

SENIORS ON THE MOVE!

Council on Aging announces trip to Providence, Rhode Island

Mayor Carlo DeMaria's Council on Aging is pleased to announce a special trip to Providence, Rhode Island on Tuesday, October 21st. Attendees will enjoy a tour of Providence's grand history including Federal Hill. In addition, attendees will enjoy a delicious luncheon at Constantino's Italian Restaurant in Little Italy.

The luxury coach bus departs from the Spring Street parking lot at 9:00AM on Tuesday, October 21st.

For more information please contact Dale at 617-394-2323 or Ida at 617.394.2260

COUNCIL ON AGING ANNOUNCES SEPTEMBER SENIOR MOVIES

Mayor Carlo DeMaria and the Council on Aging are pleased to announce the lineup for the Senior Matinee Movie Series for the month of September:

Thursday, September 4th "God's Not Dead"
Starring Shane Harper
Thursday, September 11th "Draft Day"
Starring Kevin Costner
Thursday, September 18th "Mom's Night Out"
Starring Sarah Drew & Sean Astin
Thursday, September 25th "The Fault in Our Stars"
Starring Shailene Woodley

All screenings take place at the Connolly Center and begin at 2:00PM. Free refreshments provided by the Mayor's Council on Aging. For more information please contact Dale at 617.394.2323 or Ida at 617-394-2260

CITY TO HOLD 9/11 CANDLELIGHT VIGIL

Mayor Carlo DeMaria would like to invite all residents to this year's ceremony honoring the victims, heroes, and their families of the September 11, 2001 tragedy. A candlelight vigil will be held on Thursday, September 11th at 6PM in Everett Square at the 9/11 Memorial Park.

Massachusetts Bay Transportation Authority

Legal Notice – Request for Proposals: Sale of Land Off of Lower Broadway, Everett, Massachusetts

The Massachusetts Bay Transportation Authority (MBTA) has received an offer to purchase certain property located off of Lower Broadway, Everett Massachusetts (consisting of 3 parcels of land with an aggregate area of approximately 2.0 acres) for cash consideration of $6,000,000 and additional consideration of the construction of access drive and traffic signalization improvements benefitting the MBTA's adjacent land.

Any person wishing to exceed the offer that has been received shall submit a sealed proposal to Massachusetts Realty Group, the MBTA's designated representative, in accordance with requirements set forth in a Notice of Proposal and Request for Response (RFR) available at www.mbtarealty.com or by contacting:

Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
Attention: Thomas Cox
tcox@greyco.com
(617) 316 1670

Proposals are due by Friday, October 3, 2014 at 11:00 AM. A qualifying higher proposal is one that raises the total consideration (combined cash and non-cash consideration) to be received by the MBTA in connection with the sale. A qualifying higher proposal must be accompanied by a deposit of certified funds in the amount of 25% of the cash consideration of the bid. Proposals may be subject to a best and final offer process.

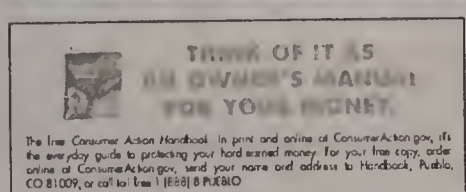
Any questions concerning the RFR should be addressed in writing to Thomas Cox of Massachusetts Realty Group at the address noted above.

Black Black

CHIEF MAZZIE AND EPD CELEBRATE RETIRING K9 DOG "WARNER"

Chief Steven Mezzie and the Everett Police Department (photo right) recently honored retiring City of Everett canine, Werner, for his service and dedicetion to the City. Warner wes the second canine added to the EPD and has served for eight (8) years with Officer Eric Rizze as e Detection Oog for explosive devices. During his time, Werner successfully contributed in loceting and eppre-hending people involved in criminal ectivity end eided in the location of evidence et numerous crime scenes. Warner, the first cenine ever to be retired by the EPO, will live out his retirement with Officer Rizza end his family (photo left).

FOR ADVERTISING RATES, PLEASE CALL 617-387-9600



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Or call: 1-855-8-INTERNET (1-855-846-8376)

COMCAST

EVERETT'S SEPTEMBER 11 TRIBUTE

PHOTOS BY KATY ROGERS

A large turnout of residents gathered in Everett Square next to the Parlin Library on Thursday evening, Sept. 11, to pay their respects to the victims of September 11, 2001 on the 13th anniversary of the tragic event. Candles were lit in memory of those who lost their lives that day. Attendees peacefully gathered listening to a brief speech made by Mayor Carlo DeMaria before lighting their candles and passing the light of hope amongst one another.

A Flag of Honor was presented containing all the names of those who lost their lives on September 11, 2001.

Mayor Carlo DeMaria addressed the crowd as he remembered September 11, 2001.

Mayor Carlo DeMaria and attendees stand together.

Everett Police Color Guard hold their flags high.

Everett High School student Jennifer Hart recites a poem about the Twin Towers in New York City.

Councilors John Hanlon and Fred Capone stand with friends and relatives.

Reverend Thomas Coots from the Glendale Lighthouse Church leads the crowd in prayer.

Councilor-at-Large John Hanlon holds his candle in remembrance.

Everett Police Lieutenant Jim Gabriel plays the bagpipes while candles are lit.

Joseph Hickey of Everett Veterans Office, Bishop Brown of the Zion Baptist Church, and State Sen. Sal DiDomenico and his son, Sal, following the candlelight vigil

Newly elected State Rep. Joe McGonagle, Tyrone Campbell, Police Lt. Jim Gabriel and Bishop Brown.

Senator Sal DiDomenico's son, Sal, holds his candle steady while it is lit

First Day At School

The First Day of School can be a very happy & special day for both parents, grandparents & children.

PLEASE SHARE THOSE PHOTOS WITH US

• Child's Name • School • Newspaper to be published in (Choose One)

Photos will be published in
The Revere Journal, Chelsea Record,
Winthrop Sun Transcript, Everett Independent,
East Boston Times, Lynn Journal
on September 24th & 25th.
Deadline Thursday, September 19th.

Mail photos or Drop off to:
Revere Journal 385 Broadway
Citizens Bank Building, Revere, MA 02151
or email photos to: colin@lynnjournal.com
Not responsible for lost or unpublished photos
Photos must be picked up in 30 days

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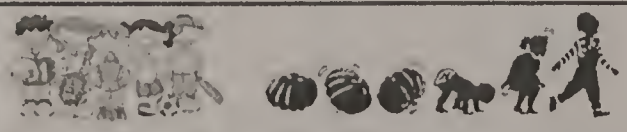

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6 weeks to 7 years old for TLP • 5 years to 10.9 for School Age Express Too!

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Hours of operation
Mondays thru Friday 6:30 AM to 6:00 PM

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1-888-four TLP

www.terrislittlepumpkins.com

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MARKETPLACE, ETC.

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BUYING TOY TRAINS! Lionel American Flyer Marx & ESP GERMAN TRAINS Kurt 800-659-9454

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HAND OR POWER. Carpenter, electrical, machinist, mechanic, plumber, call Andy 1-800-745-8665

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Necklaces, Pins, Rings, Earrings & Bracelets Also buying Gold & Silver
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Junk Car or Truck? Have it towed away today! Check out the Auto Donations guide running every day in the Boston Herald automotive section.

Picture This! In-column photos are now available for automotive, real estate and merchandise ads in the Boston Herald. Call today for information, **617-423-4545.**

Considering a Move? Check out HOME SHOWCASE, a weekend listing of homes and condos for sale every Friday and Sunday in the Boston Herald.

LEGAL NOTICES | LEGAL NOTICES

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PROBATE CITATIONS | PROBATE CITATIONS

CARE AND PROTECTION
TERMINATION OF PARENTAL RIGHTS
SUMMONS BY PUBLICATION
DOCKET NUMBER: 13CP0087SP

COMMONWEALTH OF MASSACHUSETTS
Hampden County Juvenile Court
80 State Street
Springfield, MA 01102
(413) 748-7714

TO: The Father of Mariel Ventura Mota, Born on 12/09/2004 to Madeline Ayala

A petition has been presented to this court by Department of Children & Families Springfield, seeking, as to Mariel Ventura Mota that said child(ren) be found in need of care and protection and committed to the Department of Children and Families. The court may dispense the rights of the person(s) named herein to receive notice of or to consent to any legal proceeding affecting the adoption, custody, or guardian ship or any other disposition of the child(ren) named herein, if it finds that the child(ren) is/are in need of care and protection and that the best interests of the child(ren) would be served by said disposition

You are hereby ORDERED to appear in this court, at the court address set forth above, on the following date and time: 09/25/2014 09:00 AM Other Hearing

You may bring an attorney with you. If you have a right to an attorney and if the court determines that you are indigent, the court will appoint an attorney to represent you

If you fail to appear, the court may proceed on that date and any date thereafter with a trial on the merits of the petition and an adjudication of this matter

For further information, call the Office of the Clerk- Magistrate at (413) 748 7714
WITNESS:
Hon Daniel J. Swords
FIRST JUSTICE
DATE ISSUED: 08/18/2014
Christina A Calabrese
CLERK-MAGISTRATE
Sept 3, 7, 14

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CKC Male Sable
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Cash. 508-371-0029

CHINESE SHARPEI PUPS
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978-821-1221

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ENGLISH BULL TERRIER AKC. 1Male Tan & White 14 months $1,000 or B/O 508-574-6346

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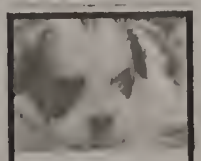

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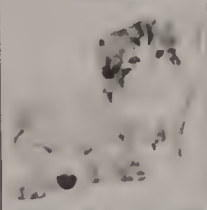

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To reach the Boston Herald Classified Advertising Department, call **617-423-4545.**

PETS

WE LOVE PETS!
Find a loving home for your pet through the Boston Herald Classifieds 4 lines, 2 weeks, $42. Free Photo!
For more info call
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WEST HIGHLAND TERRIER PUPPIES: 3 females, family raised. Vet checked $500.
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603-498-6221
www.puppiesR4sale.com

YORKIE POO PUPPIES
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Home delivery of the Boston Herald is now available in all areas. For information, call **1-800-882-1211.**

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workplace diversity **JOB FAIR**

TUESDAY, OCTOBER 28
10 AM - 4 PM

NEW LOCATION!

THE COLONNADE HOTEL
120 HUNTINGTON AVE., BOSTON, MA

Helping you to build a talented, diverse workforce is the goal at the Boston Herald's Workplace Diversity Job Fair. Don't miss the opportunity to meet MBAs, undergraduates and skilled professionals who are actively seeking employment.

Pullout: Monday, October 27

Deadline: Thursday, October 23

Space is limited. For rates and information, please call (617) 619-6123 or email doris.picardi@bostonherald.com

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DRIVERS | DRIVERS

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APT RENTALS

ARLINGTON
2 rm eff., Heat/Hotwater, laundry, $900 617-800-4506, no smk/no pets.

BOSTON/JP-2BR, Avail Now Pond View, Nr Brk Vil, T, Hosp., Schools Parking, No Fee, $2000 857-247-2153

CHELSEA: 2BR $1,345.; free Heat & HW, 3 closets, laundry, Hdwd flrs, Porch NO FEE 617-884-8882 R.E.

DORCHESTER
2BR, 1BA, new kit/ba, rear patio. Sect 8 OK. $1,350/mo utils not included
617-524-2988

LAND COURT NOTICE | LAND COURT NOTICE

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF THE TRIAL COURT
(SEAL)
SUFFOLK, ss.
SUPERIOR COURT DEPARTMENT
OF THE TRIAL COURT
CIVIL ACTION: 14 2599B

TO: Deborah E. Gray and to all persons entitled to the benefit of the Soldiers' and Sailors' Civil Relief Act of 1940 as amended:

Eastern Bank, claiming to be the holder of a mortgage covering real property in Mattapan in said County of Suffolk on Oakridge Street and numbered 19 given by Deborah E. Gray to and presently held by Eastern Bank dated October 28, 2004 and recorded at Suffolk County Registry of Deeds in Book 35771, Page 145 has filed with said court a complaint for authority to foreclose said mortgage in the manner following: by entry and possession and exercise of power of sale

If you are entitled to the benefits of the Soldiers' and Sailors' Civil Relief Act of 1940 as amended and you object to such foreclosure you or your attorney should file a written appearance and answer in said court at Suffolk on or before the twentieth day of October 2014, or you may be forever barred from claiming that such foreclosure is invalid under said act

Witness, Barbara J. Rouse, Esquire., Chief Justice of the Superior Court, the 28th day of August in the year of our Lord Two Thousand and Fourteen
Attest:
MICHAEL JOSEPH DONOVAN
Clerk/Magistrate
Sept 10

APT RENTALS

DORCHESTER 2BR in 2 Fam. Newly Renovated hdwd flr, Sec 8 ok, No Pets, $1,350. 617-416-4832

DORCHESTER
3 Bed, 1.5 bath Exposed Brick, Boston view High Ceiling, Section 8 ok, $1,750/mo
617-524-2988

DORCHESTER
3BR near bus station, Sect 8 OK $1,400 617-938-8691

DORCHESTER
Mod 3 & 4 BR deleaded no fee S8 ok RE 617 524 5464 X10

DORCHESTER: Spac 3BR or 4BR nr T, shops, no pets deleaded, Sec 8 ok $1800 avail Sept. 617-293-3429

EQUAL HOUSING OPPORTUNITY
Publisher's Notice
All real estate advertised in this publication is subject to the Federal Fair Housing Act of 1968, the Massachusetts Anti Discrimination Act and the Boston & Cambridge Fair Housing Ordinances which make it illegal to advertise any preference, limitation, or discrimination based on race, color, religion, sex, handicap, familial status, national origin, ancestry, age, children, marital status, sexual orientation, veterans status or source of income or any intention to make any such preference, limitation or discrimination
This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised are available on an equal opportunity basis
To complain of discrimination call HUD toll free at 1-800-827-5005. For the NE area call HUD at 617-994-8300. Toll free number for hearing impaired is 1-800-927-9275 or 617-565-5453.

EVERETT- 4 Rm Jnr 2 BR Also Large Modern S Rm, 2BR Exc. Local! Ask $1200. - $1500 no pets/smkg. 617-389-9309

JAMAICA PLAIN - 3BR Nr. T Green St Sta., Sec 8 OK $1600. 617-442-5189 or 617-462-3859 Oct 1

MALDEN STUDIO pkg 1 car, $950. 1st/last/sec Avail Now 617-407-1261 After 4:30

MATTAPAN 3 br 2nd flr, hw flrs, near T. $1400, No Pets. 617-755-6365

MATTAPAN: 3BR, near T, de-leaded, hwf. Section 8 OK $1,500 no utilities. 617-698-4771

ROSLINDALE
Attractive studio apt. near T, $800 including utils Won't last! 617-947-4390

SOMERVILLE - 2,3,4 BR's Modern, Walk to T, Laundry, HardWood Floors Permit Parking 781-583-8096

ROOMMATES

WALTHAM: Furnished Rm Shared Kit & Bath, All Utils Included $160-$165/wk, 781-891-9166 or 617-678-8732

ROOM RENTALS

ARLINGTON Near T, Lovely furnished room, shared kitchen, no smoking, $140/wk 781-643-1576

DORCHESTER
Fields Cor & Melville Ave. area, Rooms unfurnished 617-825-2321

ROOM RENTALS

DORCHESTER
NICE CLEAN ROOM $125 PER WEEK 857-333-3390

DORCHESTER ROXBURY Rm w/shared K&B $165-$175/wk 857-492-6680/ 617-504-6228

JAMAICA PLAIN
Rooms with kitchenette & bath, Near Transportation $150- $185/wk
617-524-2988

LYNN: FURNISHED ROOMS All Utils, Fridge/Microwave Near Bus $125/wk 781-599-2856

LYNN
FURNISHED ROOMS Near T. Clean, Quiet Includes Utilities, Fridge, Washer & Dryer. $125 Per Week.
CALL: 781-521-9411 or 781-233-1944

LYNN. Lg Furn Rm, all utils incl $500. Herbert 978-417-2268, 781-888-2037 after 4pm; John 781-513-0680

LYNN: Near Ocean, Clean Furnished Room, Near T, Parking, shared kitchen/ bath, Includes Utils 781-942-7113

LYNN: Rooms for Rent $600/mo. All Utils. Incl. FREE Cable/Wifi/Wash/Dry 1st & Last 857-233-8217

MATTAPAN FURNISHED RM, $150 per wk, Newly Decorated 857-312-3659

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(NR. SALEM COMMON)
Sober Home on the ocean. Single Rooms Males & Females.
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LEGAL NOTICES

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LEGAL NOTICES

Massachusetts Bay Transportation Authority

Legal Notice -
Request for Proposals: Sale of Land Off of Lower Broadway, Everett, Massachusetts

The Massachusetts Bay Transportation Authority (MBTA) has received an offer to purchase certain property located off of Lower Broadway, Everett Massachusetts (consisting of 3 parcels of land with an aggregate area of approximately 2.0 acres) for cash consideration of $6,000,000 and additional consideration of the construction of access drive and traffic signalization improvements benefitting the MBTA's adjacent land.

Any person wishing to exceed the offer that has been received shall submit a sealed proposal to Massachusetts Realty Group, the MBTA's designated representative, in accordance with requirements set forth in a Notice of Proposal and Request for Response (RFR) available at www.mbtarealty.com or by contacting::

Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
Attention: Thomas Cox
tcox@greyco.com
(617) 316-1670

Proposals are due by Friday, October 3, 2014 at 11:00 AM. A qualifying higher proposal is one that raised the total consideration (combined cash and non-cash consideration) to be received by the MBTA in connection with the sale. A qualifying higher proposal must be accompanied by a deposit of certified funds in the amount of 25% of the cash consideration of the bid. Proposals may be subject to a best and final offer process.

Any questions concerning the RFR should be addressed in writing to Thomas Cox of Massachusetts Realty Group at the address noted above.

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
NOTICE OF PUBLIC COMMENT

Notice is hereby given that the Massachusetts Department of Conservation and Recreation (DCR), acting under its authority pursuant to M.G.L. c 21, §§37B, 37C, 37D; M.G.L. c.21A, §10H; and M.G.L. c.90B, §5D, and in conformance with M.G.L. chapter 30A, will hold public hearings regarding the adoption of e new regulation at 302 CMR 18.00 (Aquatic Nuisance Control Program). This regulation will establish an aquatic nuisance control program which aims to suppress, eradicate, control and otherwise mitigate or reduce the risk of the spread of aquatic nuisances throughout the Commonwealth.

Four (4) public hearings will be conducted to receive public comroent, both oral and written, on the proposed adoption of a new reguletion at 302 CMR 18 00.

DCR West Boylston Office — Date: Septeoiber 29, 2014
180 Bearoan Street — Tloie: 10:00 AM - Noon
West Boylston, MA

DCR West Region Office — Date: September 30, 2014
740 South Street — Time: 10:00 AM - Noon
Pittsfield, MA

Waquoit Bay Reserve Headquarters — Oate: October 20, 2014
at the Boathouse — Time: 10:00 AM - Noon
131 Waquoit Highway, (Rte. 28)
Waquoit (E. Falmouth), MA

Charles River Watershed Association — Date: Octobar 21, 2014
190 Park Road (at Leo J. Martin Golf Course) Time: 10:00 AM - Noon
Weston, MA

Verbal and written testimony may be presented at tha public hearings; however, parties are requested to provide written copies of their testimony. Written comments will be accepted beginning September 19, 2014 until 5:00 p ro. E.D.T. on Monday, November 3, 2014. Please submit writtan coroments to Laura Dietz via mail to Department of Conservation and Recreation, 251 Causeway Street, Suite 600, Boston, MA 02114, or electronically to regs comroents@state ma.us

You roay request a copy of the proposed new regulation froro Barbara Black by calling 617-626-1401, or by submitting an electronic request to barbara.black@state.ma us. Also, the proposed new regulation will be available on DCR's website.

By order of the Department of Conservation and Recreation.
John P Murray, Commissinner

September, 2014

Sept t7

THE STATE OF NEW HAMPSHIRE BANKING DEPARTMENT
NOTICE OF MERGER OF CENTRIX BANK
& TRUST WITH AND INTO EASTERN BANK

The New Hiropshire Banking Department hereby gives notice that Centrix Bank and Trust ("Centrix"), a New Hampshire chartered coromercial bank, located at 1 Atwood Lane, Bedford, New Hampshire will oierge with and into Eastern Bank, a Massachusetts-chartered trust company headquartered at 265 Franklin Street, Boston, Massachusetts Eastern Bank will be the successor in interest to Centrix. The anticipated effective date is October 24, 2014

The charter and bylaws of the surviving institution will be those of Eastern Bank The surviving institution will assume the operations of the oierging institution, and the name of the surviving institutinn will be "Eastern Bank."

Each account holder of Centrix inroediately prior to the merger will continue to hnld an identical account with respect tn dollar amount, interest rate, maturity and other terms and conditions, in Eastern Bank, following the merger. No restriction on the withdrawal of funds by depositors of Centrix will be necessary as a resulf of the merger.

Depositors of Centrix are entitled to withdraw their deposits upon demand on or before the effective date of the roerger. Any depositor of the bank who does not withdraw the amount deposited to his or her cradit, shall be deemed to heve assented to the plan and shall be entitled to a deposit of a like aroount without interruption of interest in the benk resulting froro the merger.

This notice is being published in accordance with N.H. RSA 388.

/s/
Ingrid E White
New Hampshire Deputy Bank Commissioner

Sept 17, 24, Oct t

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION
NOTICE OF PUBLIC COMMENT

Nntice is hereby given that the Massachusetts Department of Conservation and Recreation (DCR), acting under its authority pursuant to M.G L Chapter 21, section 1; Chapter 92, sections 33, 34B, 37; Chapter 132A, section 7; Chapter 21A, section 2(28); and Chapter 41 nf the Acts of 2003, and in conformance with M.G L. Chapter 30A, will npen a public coroioent perind regarding the rescission of an existing regulation at 302 CMR 3 00 (Scenic and Recreational Rivers Orders), as its enabling statute (M.G.L chapter 21, sectinn 17B) was repealed in 2003, rendering it ineffective.

Written conments will be accepted by the Department of Conservation and Recreation beginning at 9:00 a.m E.D.T on Friday, September 19, 2014 until 5:00 p.m. E.D.T. on Monday, October 20, 2014 Please subroit written comments to Laura Dietz and mail to the Department of Conservation and Recreation, 251 Causeway Street, Suite 600, Bostoo, MA 02114, or electronically to regs.comments@state.ma.us You may request a copy of the proposed regulation sought to be rescinded by calling Barbara Black at 617-626-1401, or by subroitting an electronic request to Barbara.black@state ma.us The proposed regulation slated for rescission will also be available on DCR's website.

By order of the Departoient of Conservation and Recreation.

John P Murray, Commissioner
Septeoiber 2014

Sept 17

THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF CONSERVATION AND RECREATION,
OFFICE OF WATER RESOURCES
NOTICE OF PUBLIC COMMENT

Nntice is hereby given that the Massachusetts Oepartroent of Conservation and Recreatinn (OCR), Office of Water Resources, acting under its authority pursuant to M.G.L. Chapter 21, sections 1, 11; Chapter 21A, section 2(28); Chapter 92, sections 33, 34B, 37; Chapter 132A, section 7; and Chapter 41 of tha Acts of 2003, and in conformance with M.G.L. Chapter 30A, will open a public comment period regarding the rescission of an existing regulation at 313 CMR 3.00 (Registration of Well Drillers and Filing of Well Completion Reports), which regulates e program that has been moved to the Oepartment of Environmental Prntectinn (DEP) as part of Governor Patrick's Reorganization Plan 2009-1. (Note that OEP promulgated its own regulations relating to this program in 2010, at 310 CMR 46.00.)

Written comments will be accepted by the Oepartment of Conservation and Recreation beginning at 9:00 a.m. E.D.T on Friday, September 19, 2014 until 5:00 p.m. E.D.T. on Monday, October 20, 2014. Please submit written comments to Laura Dietz and mail to the Department of Conservation and Recreation, 251 Causeway Street, Suite 600, Boston, MA 02114, or electrnnically to regs.coomments@state roa.us. You may request a copy of the proposed regulation sought to be rescinded by calling Barbara Black at 617-626-1401, or by submitting an electronic request to Barbara.black@state.ma.us. The proposed regulation slated for rescission will also be available on DCR's website

By nrder of the Department of Conservation and Recreation.

John P Murray, Commissioner
September 2014

Sept 17

MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY
NOTICE FOR CONTRACT PROPOSALS

Notice is hereby given that sealed proposals will be received by the Massachusetts Municipal Wholesale Electric Company at its general offices at 327 Moody Street, Ludlow, MA 01056, until 2:00 p.m., Tuesday, Saptember 30, 2014, for the material, equipment, work and services, described in its Documents entitled "Dow Chemical Cation Resin and Anion Resin", Request for Proposal No. BB-140825, dated August 25, 2014. All proposals will be opened publicly on the date and time specified.

The Documents roay be obtained from the Purchasing and Supponrt Manager or exaoined at the general offices of MMWEC.

MMWEC reserves the right to reject any and all propnsals

Massachusetts Municipal Wholesale
Electric Company
Prncurement Departroant

Sept 17

Massachusetts Bay Transportation Authority

Legal Notice •

Request for Proposals: Sale of Land Off of Lower Broadway, Everett, Massachusetts

The Massachusetts Bay Transportation Authority (MBTA) has received an offer to purchase certain property located off of Lower Broadway, Everett Massachusetts (consisting of 3 parcels of land with an aggregate area of approximately 2.0 acres) for cash consideration of $6,000,000 and additional consideration of the construction of access drive and traffic signalization improvements benefitting the MBTA's adjacent land.

Any person wishing to exceed the offer that has been received shall submit a sealed proposal to Massachusetts Realty Group, the MBTA's designated representative, in accordance with requirements set forth in a Notice of Proposal and Request for Response (RFR) available at www.mbtarealty.com or by contacting::

Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
Attention: Thomas Cox
tcox@greyco.com
(617) 316-1670

Proposals are due by Friday, October 3, 2014 at 11:00 AM. A qualifying higher proposal is one that raised the total consideration (combined cash and non-cash consideration) to be received by the MBTA in connection with the sale. A qualifying higher proposal must be accompanied by a deposit of certified funds in the amount of 25% of the cash consideration of the bid Proposals may be subject to a best and final offer process.

Any questions concerning the RFR should be addressed in writing to Thomas Cox of Massachusetts Realty Group at the address noted above.

Don't store your boat or motorcycle...SELL IT!
Boston Herald Classifieds
617.423.4545

Notice
Auction Sale according to all laws of unredeemed average pledges of the Goldmine 234 Broadway Chelsea 9 30am, Monday, September 22, 2014 Richard Veader Auction MA lic #2057

Auction sale of all unredeemed pledges of Empire Loan Co. of Stoughton on the premises 1130 Washington Street, Boston, MA on Oct. 7, 2014 @ 10:00 a.m. by Harvey Cohen, Auctioneer, MA. Lic. #353

MORTGAGE FORECLOSURE MORTGAGE FORECLOSURE MORTGAGE FORECLOSURE

NOTICE OF MORTGAGEE'S SALE OF REAL ESTATE

By virtue and in execution of the Power of Sale contained in a certain mortgage given by Alberto Beraldo to Mortgage Electronic Registration Systems, Inc., dated July 20, 2005 and recorded with the Suffolk County Registry of Deeds at Book 37625, Page 113, of which mortgage the undersigned is the present holder by assignment from Mortgage Electronic Registration Systems, Inc. to JPMorgan Chase Bank, National Assnciation dated April 20, 2012 and recorded with said registry nn May 9, 2012 at Book 49481 Page 225, for breach of the conditions of said mnrtgage and for the purposa of foreclosing, the same will be sold at Public Auction at 11:00 a.m. on October 9, 2014, on the mortgaged premises located at 964 Bennington Street, East Boston (Boston), Suffolk County, Massachusetts, all and singular the premises described in said mortgage,

TO WIT:

the land in that part of said Boston called East Boston, in the County of Suffolk and Commonwealth of Massachusetts, with the buildings thereon now numbered 964 Bennington Street, being Lot 13 on a plan by S.L. Leftevich, dated January 14, 1914, recorded with Suffolk Deeds in Book 3787, page 295, bounded:
SOUTHEASTERLY: by Bennington Street, twenty eight and 10/100 (28.10) feet;
SOUTHWESTERLY: by Lot 12, one hundred seven (107) feet;
NORTHERLY: by Lots 4 and 5, twenty eight and 97/100 (28.97) feet; and
NORTHEASTERLY: by Lots 14, ninety nine and 98/100 (99.98) feet
Containing 2908 square feet of land, all as shown on said plan.

For mortgagor's(s') title sea deed recorded with Suffolk County Registry of Deeds in Book 25784, Page 205.

These premises will be sold and conveyed subject to and with the benefit of all rights, rights of way, restrictions, easements, covenants, liens or claims in tha nature of liens, improvements, public assessments, any and all unpaid taxes, tax titles, tax liens, water and sewer liens and any other municipal assessments or liens or existing encumbrances of record which are in force and are applicable, having priority over said mortgage, whether or not reference to such restrictions, easements, improvements, liens or encumbrances is made in the deed.

TERMS OF SALE:

A deposit of Ten Thousand ($10,000 00) Dollars by certified or bank check will be required tn be paid by the purchaser at the time and place of sale. The balance is to be paid by certified or bank check at Harmon Law Offices, P.C., 150 California Street, Newton, Massachusetts 02458, or by mail to P.O. Box 610389, Newton Highlands, Massachusetts 02461-0389, within thirty (30) days from the date of sale. Deed will be provided to purchaser for recording upon receipt in full of the purchase price. The description of the premises contained in said mnrtgage shall control in the event of an ernnr in this publication.

Other terros, if any, to be announced et the sala.

JPMORGAN CHASE BANK, NATIONAL ASSOCIATION
Present holder of said mnrtgage

By its Attorneys,
HARMON LAW OFFICES, P.C.
150 California Street
Newton, MA 02458
(617) 558-0500
201204-0378 - PRP

Sept 17, 24, Oct 1

LEGAL NOTICES

Auction sale of all unredeemed pledges of Empire Loan Co. on the premises 1130 Washington Street, Boston, MA, on OCT. 7, 2014 @ 10:00 a.m. by Harvey Cohen, Auctioneer, MA Lic. #353

LEGAL NOTICES

Auction Sale of unredeemed pledges of Empire Loan Co. of Lynn on the premises 1130 Washington St, Boston, MA. on Oct. 7, 2014 @ 10:00 a.m. by Harvey Cohen, Auctioneer MA. Lic. #353

For home delivery of the Boston Herald, please call (800) 882-2211.

Closing Statement - Office File No. 12-0478MA/MBTA

Massachusetts Bay Transportation Authority ("MBTA")

to

Wynn MA, LLC

Broadway and Horizon Way, Everett, MA

February 27, 2015

Summary of Buyer's Transaction		Summary of Seller's Transaction	
Gross Amount Due from Buyer		**Gross Amount Due to Seller**	
Contract Sales Price	6,000,000.00	Contract Sales Price	6,000,000.00
Interim Rundown and Report	600.00		
Final Rundown and Recording	600.00		
Title Insurance Premium	2,400.00		
Recording Fees	715.00		
Courier/Overnight Mail	40.00		
Total Buyer Charges	**6,004,355.00**	**Total Seller Credits**	**6,000,000.00**
Amounts Paid By or For Buyer		**Reductions In Amount Due Seller**	
Deposit paid to Seller	1,500,000.00	Deposit paid to Seller	1,500,000.00
Total Paid By or For Buyer	**1,500,000.00**	**Total Reduction in Amount Due Seller**	**1,500,000.00**
CASH DUE FROM BUYER	**4,504,355.00**	**CASH DUE TO SELLER**	**4,500,000.00**

This settlement statement has been prepared based upon information provided to us by the parties to this transaction. We have not independently verified the information contained herein, and as such, the liability of the Company hereunder is limited to the amount of the service fee paid for preparation of this settlement statement.

WYNN MA, LLC	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
BY:	BY:
	Mark E. Boyle
	Assistant General Manager for Real Estate and Asset Development

WYNN MA, LLC		MASSACHUSETTS BAY TRANSPORTATION AUTHORITY	
BY:		BY:	
		Mark E. Boyle	
		Assistant General Manager for Real Estate and Asset Development	

2015 00028021
Bk: 64987 Pg: 327 Doc: DEED
Page: 1 of 9 03/02/2015 12:36 PM

QUITCLAIM DEED

The **MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts existing pursuant to Massachusetts General Laws, Chapter 161A, with a principal place of business at Ten Park Plaza, Boston, Massachusetts 02116 (the "MBTA"), for consideration of Six Million and 00/100 Dollars ($6,000,000.00), the receipt of which is hereby acknowledged, does hereby grant to **WYNN MA, LLC**, a Nevada limited liability company with a place of business at 3131 Las Vegas Boulevard, South Las Vegas, NV 89109, and its successors and assigns ("Grantee"), with quitclaim covenants, and subject to all easements, restrictions, reservations and eminent domain takings by third parties of record, those certain parcels of land located off of Lower Broadway, Everett, Massachusetts, containing an aggregate area of approximately 76,594 square feet of land (1.758± acres), including any improvements thereon and appurtenances thereto, if any (the "Premises"), shown as "Parcel 1," "Parcel 2" and "Parcel 3" on a plan (the "Plan") entitled "Approval Not Required Plan, 84 Broadway, Everett, Mass.," prepared by Feldman Land Surveyors, dated January 7, 2014 and recorded herewith at the Middlesex County (Southern District) Registry of Deeds (the "Registry"), and more particularly described in **Exhibit A** attached hereto.

Parcels A, B, C, 4 Broadway Everett, MA

For the MBTA's title, see Land Court Certificate of Title No. 23155 filed with the Southern Middlesex Land Registration District at Book 155, Page 33, as affected by Court Order dated January 16, 2004 deregistering the Premises, an attested copy of which is recorded with the Registry in Book 41791, Page 250.

The Premises are conveyed subject to the terms and conditions of a certain Easement Agreement between the MBTA and Grantee of even date and recorded simultaneously herewith.

By acceptance of this Deed, Grantee agrees to use the Premises in a manner that is approved by the City of Everett and consistent with the City of Everett Lower Broadway Master Plan and applicable zoning regulations. Grantee further agrees that Grantee's use of the Premises shall not be inconsistent with and shall not materially interfere with use and operation of the MBTA's remaining land adjacent to the Premises ("Everett Shops") by the MBTA. The MBTA agrees that Parcel 1 shall be used as part of the access to the Grantee's project on adjacent premises and Parcels 2 and 3 shall be used for a shared access driveway and to facilitate the relocation of the main entrance to Everett Shops from Horizon Way to a new location off of Lower Broadway.

Recorded Land only

SEE PLAN NO. 142 OF 2015

The MBTA hereby expressly disclaims any representations or warranties of any nature, express or implied or otherwise, except as expressly set forth herein. By accepting this Deed, Grantee agrees that the MBTA has made no representation or warranty about the condition of the Premises, including, without limitation, no representation or warranty about the presence or absence of oil, hazardous materials or hazardous wastes as those terms are defined in the Massachusetts General Laws, Chapter 21E, as from time to time amended (collectively, "Hazardous Materials"), and as further defined in all other applicable state and Federal laws regarding Hazardous Materials on, in, at, over, under, from, through or associated with the Premises; nor has the MBTA made any representation as to the fitness of the Premises for any proposed use, the suitability of the Premises for any particular purpose, or as to the ability of the Grantee to obtain any necessary permits or approvals relating to the Premises. Grantee hereby accepts the Premises "as is"; including, but not limited to, (a) any Hazardous Materials that may be present on, in, at, over, under, from, through or associated with the Premises and (b) the fact that the Premises are subject at all times to noise, fumes, odors and vibrations and other negative conditions associated with the operation of the MBTA's transportation system. Therefore by accepting and recording this Deed, Grantee, for itself, its successors and assigns, hereby releases the MBTA from any liability because of the condition of the Premises.

In addition, by accepting and recording this Deed, Grantee, for itself, its successors and assigns, agrees: (1) to defend, indemnify and save the MBTA harmless from and against any and all liabilities, losses, damages, costs or expenses (including reasonable attorneys' or other professional fees) of any nature whatsoever, now or thereafter asserted against the MBTA and arising out of the ownership or use of the Premises, including without limitation, (a) those related to personal injuries or death, (b) those by any governmental agency or third party resulting from the presence of Hazardous Materials on the Premises or on any abutting premises not owned by the MBTA caused by migration of such Hazardous Materials from the Premises, and (c) those related to any noise, fumes, odors and vibrations and other negative conditions affecting the Premises or adjacent land of Grantee or Grantee's affiliates associated with the operation of the MBTA's transportation system; (2) not to sue (and not to encourage or assist others to sue) or commence action, claim, counterclaim or cross-claim, or otherwise seek affirmative relief against the MBTA (a) arising out of the presence of Hazardous Materials on, in, at, over, under, from, through or associated with the Premises or on any other premises not owned by the MBTA because of migration of such Hazardous Materials from the Premises, or (b) arising out of the fact that the Premises are subject at all times to noise, fumes, odors and vibrations and other negative conditions associated with the operation of the MBTA's transportation system; and (3) to include this paragraph in any subsequent deed of all or part of the Premises. Any required response action related to the Premises required by a governmental authority shall be performed by Grantee, and its successors and assigns at Grantee's, and its successors' and assigns' sole cost and expense and shall be performed in accordance with Massachusetts General Laws Chapter 21E, the Massachusetts Contingency Plan, and any other Applicable Environmental Laws, defined below.

For the purpose of this Deed, the term "Applicable Environmental Laws" means, without limitation, all state and/or Federal laws, statutes, codes, acts, ordinances, orders, judgments, decrees, injunctions, rules, regulations, permits, licenses, authorizations, directions and requirements, of all governments, departments, and offices, relating in any way to the control and/or abatement of environmental pollution and environmental hazards that now or at any time hereafter may be applicable.

All the terms and provisions of this Deed shall bind and inure to the benefit of the MBTA and Grantee respectively and their respective legal representatives, successors and assigns.

[Signature page follows]

IN WITNESS WHEREOF, the MBTA has hereunto set its hand and seal this 26th day of February, 2015.

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

By: _____
Beverly A. Scott, Ph.D.
General Manager and Rail & Transit Administrator

By: _____
Stephanie Pollack
Secretary & Chief Executive Officer
Massachusetts Department of Transportation

Approved as to form:

By: Paige Scott Reed
Paige Scott Reed
General Counsel, MassDOT and MBTA

Commonwealth of Massachusetts

Suffolk, ss

On the 26th day of February, 2015, before me, the undersigned notary public, personally appeared Beverly A. Scott, Ph.D., proved to me through satisfactory evidence of identification, which was my personal knowledge of the said Beverly A. Scott, Ph.D., to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose as General Manager and Rail & Transit Administrator of the Massachusetts Bay Transportation Authority.

Nancy C. Cotter
Notary Public August 28, 2020

Commonwealth of Massachusetts

Suffolk, ss

On the 26th day of February, 2015, before me, the undersigned notary public, personally appeared Stephanie Pollack, proved to me through satisfactory evidence of identification, which was my personal knowledge of the said Stephanie Pollack, to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose on behalf of the Massachusetts Bay Transportation Authority as Secretary & Chief Executive Officer of the Massachusetts Department of Transportation.

Notary Public

CHERYL A. DUSTIN
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
March 12, 2021

Exhibit A

Legal Description

Exhibit A

Legal Description

PARCEL 1 BOUNDARY DESCRIPTION

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT AT THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF HORIZON WAY, AND THE SOUTHWESTERLY SIDELINE OF THE 1985 CITY LAYOUT OF BROADWAY;

THENCE RUNNING N56°25'43" W, ALONG SAID HORIZON WAY, A DISTANCE OF 62.47 FEET TO A POINT;

THENCE RUNNING N 51°39'39" W, A DISTANCE OF 25.02 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 51°39'39" W, BY SAID HORIZON WAY, A DISTANCE OF 150.67 FEET TO A POINT OF NON-TANGENCY;

THENCE RUNNING BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 219.60 FEET, AN ARC LENGTH OF 247.07 FEET, A CHORD BEARING OF N 68°31'37" E AND A CHORD DISTANCE OF 234.25 FEET TO A POINT OF NON-TANGENCY;

THENCE TURNING AND RUNNING S 65°49'25" E, A DISTANCE OF 18.45 FEET TO A POINT. THE PREVIOUS TWO COURSES BEING BY LAND NOW OR FORMERLY OF THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY;

THENCE TURNING AND RUNNING S 34°11'46" W, BY LAND NOW OR FORMERLY VMA CORPORATION, A DISTANCE OF 207.53 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 22,511 SQUARE FEET.

PARCEL 2 BOUNDARY DESCRIPTION

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT AT THE INTERSECTION OF THE SOUTHEASTERLY SIDELINE OF CHARLTON STREET AND THE SOUTHERLY SIDE OF BOWDOIN STREET;

THENCE RUNNING S 34°11'46" W, BY SAID CHARLTON STREET, A DISTANCE OF 194.65 FEET TO A POINT OF TANGENCY;

THENCE RUNNING BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 100.00 FEET AND AN ARC DISTANCE OF 24.24 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING S 55°52'08 E, BY LAND NOW OR FORMERLY OF CHARLESTON LOFTS CONDOMINIUM, A DISTANCE OF 2.92 FEET TO A POINT;

THENCE TURNING AND RUNNING S 34°11'46" W, BY LAND NOW OR FORMERLY OF WW. GRAINGER, INC., NOW OR FORMERLY OF SELF STORAGE BROADWAY LLC., AND NOW OR FORMERLY OF GOLDEN ARCHES LIMITED PARTNERSHIP, A DISTANCE OF 522.34 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°48'14" W, BY LAND NOW OR FORMERLY OF MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA), A DISTANCE OF 50.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 34°11'46" E, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 285.31 FEET TO A POINT OF NON-TANGENCY;

THENCE RUNNING BY AN ARC TO THE LEFT, HAVING A RADIUS OF 89.76 FEET, AN ARC LENGTH OF 150.95 FEET, A CHORD BEARING OF N 56°38'12" W, AND A CHORD LENGTH OF 133.78 FEET TO A POINT OF CUSP;

THENCE TURNING AND RUNNING N 76°08'36" E, A DISTANCE OF 217.03 FEET TO A POINT ON THE SOUTHERLY SIDE OF BRICK YARD LANE;

THENCE TURNING AND RUNNING N 60°32'22" E, BY SAID BRICK YARD LANE, AND SAID CHARLTON STREET, A DISTANCE OF 63.81 FEET TO A POINT OF TANGENCY;L

THENCE RUNNING BY A CURVE TO THE LEFT, HAVING A RADIUS OF 100.00 FEET AND AN ARC LENGTH OF 21.74 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 30,753 SQ. FT.

PARCEL 3 BOUNDARY DESCRIPTION

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE TERMINUS OF THE NORTHWESTERLY SIDELINE OF HORIZON WAY;

THENCE RUNNING N 00°30'21" E, A DISTANCE OF 686.85 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 00°30'21" E, BY LAND NOW OR FORMERLY OF WYNN MA LLC, A DISTANCE OF 30.30 FEET TO A POINT;

THENCE TURNING AND RUNNING N 31°25'12" E, BY LAND NOW OR FORMERLY OF WYNN MA LLC, A DISTANCE OF 96.60 FEET TO A POINT;

THENCE TURNING AND RUNNING N 40°38'05" E, BY LAND NOW OR FORMERLY OF MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA), A DISTANCE OF 510.69 FEET TO A POINT;

THENCE TURNING AND RUNNING N 52°47'13" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 24.72 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°40'32" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 112.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 76°08'36" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 25.13 FEET TO A POINT;

THENCE TURNING AND RUNNING S 56°52'34" W, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 49.57 FEET TO A POINT;

THENCE TURNING AND RUNNING S 40°38'05" W, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 734.40 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 23,330 SQUARE FEET.

ESCROW AGREEMENT

This ESCROW AGREEMENT (hereinafter the "Agreement") is made and entered into the 15th day of April, 2015, by WYNN MA, LLC, a Nevada limited liability company ("Wynn"), and EVERETT PROPERTY, LLC, a Massachusetts limited liability company, each having a place of business at 3131 Las Vegas Boulevard, South Las Vegas, NV 89109 (together, the "Wynn Parties"), MASSACHUSETTS BAY TRANSPORTATION AUTHORITY, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts existing pursuant to Massachusetts General Laws, Chapter 161A, with a principal place of business at Ten Park Plaza, Boston, Massachusetts 02116 (the "MBTA") and Fidelity National Title Insurance Company (hereinafter "Escrow Agent").

Reference is made to the following facts:

A. The MBTA has conveyed to Wynn by Quitclaim Deed dated February 26, 2015, recorded with the Middlesex South Registry of Deeds in Book 64987, Page 327 (the "MBTA Deed"), those certain parcels of land (the "Property") located off of Lower Broadway, Everett, Massachusetts, containing an aggregate area of approximately 76,594 square feet of land (1.758± acres), including any improvements thereon and appurtenances thereto, if any, shown as "Parcel 1," "Parcel 2" and "Parcel 3" on a plan entitled "Approval Not Required Plan, 84 Broadway, Everett, Mass.," ("ANR Plan") prepared by Feldman Land Surveyors, dated January 7, 2014 for a purchase price equal to $6,000,000 (the "Purchase Price").

B. Wynn acquired certain land adjacent to the Property by deed dated December 29, 2014 and recorded with the Registry in Book 64748, Page 556 and filed with the Middlesex County South Registry District of the Land Court as Document No. 1689280 with Certificate of Title No. 258475 and Everett Property, LLC acquired certain land adjacent to the MBTA's Property by deed dated February 18, 2015 and recorded with the Registry in Book 64926, Page 58 (together, "Wynn's Adjacent Land").

C. The MBTA and the Wynn Parties entered into a certain Easement Agreement dated February 26, 2015, and recorded with the Registry in Book 64987, Page 336 and filed with the Middlesex County South Registry District of the Land Court as Document No. 1693043, with Certificate of Title No. 258475, whereby the Wynn Parties granted to the MBTA certain temporary and permanent easements over portions of Wynn's property as more particularly set forth therein (the "Easement Agreement").

D. Wynn has executed a certain Quitclaim Deed to convey the Property back to the MBTA ("Wynn Deed"), and the Wynn Parties and the MBTA have executed an

agreement terminating the Easement Agreement ("Termination of Easement Agreement"), which are both being held by the Escrow Agent subject to the terms of this Agreement.

E. The Escrow Agent is in receipt of $6,000,000 (the "Escrow Money") from the MBTA, which equals the Purchase Price of the Property, and the Escrow Agent will hold Escrow Money in an interest-bearing account.

F. The conveyance of the Property is subject to the condition or restriction, under the Massachusetts Environmental Policy Act, G.L. c. 30, ss. 61, 62 – 62I, and its implementing regulations, 301 CMR 11.00 et seq., that it shall be deemed not to have taken place unless and until the Secretary of Energy and Environmental Affairs has determined that, for the project on Wynn's Adjacent Land that includes work or activities on the Property: (1) no Environmental Impact Report is required; or (2) a single or Final Environmental Impact Report is adequate and 60 days have elapsed following publication of notice of the availability of the single or final EIR in the Environmental Monitor in accordance with 301 CMR 11.15(2), provided that the MBTA shall reconsider and confirm or modify the conveyance of the Property pursuant to the MBTA Deed and any conditions thereof following completion of MEPA review.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Wynn Parties, the MBTA and Escrow Agent agree as follows:

1. Following completion of MEPA review as described in Paragraph F(1) and (2) above, the MBTA shall reconsider and confirm the conveyance of the Property, or propose modifications or conditions to the conveyance or mitigation associated therewith, all in accordance with 301 CMR 11.12(5)(b) to address impacts ("Everett Shops Impacts") to MBTA operations at the MBTA Everett Shops property resulting from the conveyance of the Property not already considered and addressed in the MBTA Deed and the Easement Agreement and consistent with the Secretary's Certificate determining the final EIR for the Wynn Resort in Everett (EEA No. 15060) is adequate (collectively, the "MBTA Final Action"), promptly after which, as hereby agreed by the MBTA and the Wynn Parties:

    a. If the MBTA determines that the MBTA Final Action requires no modifications or conditions to the conveyance of the Property or mitigation associated therewith, the Escrow Agent shall return the Wynn Deed and Termination of Easement Agreement to Wynn, and the Escrow Money to the MBTA (together with any interest earned thereon); or

    b. If the MBTA determines that the MBTA Final Action requires modification or conditions to the conveyance of the Property or mitigation associated therewith as a result of the Everett Shops Impacts, the MBTA and the Wynn Parties shall work in good faith to document such required modifications, conditions, or

mitigation commitments in recordable form, after which the Escrow Agent shall (i) return the Wynn Deed and Termination of Easement Agreement to Wynn, and the Escrow Money to the MBTA (together with any interest earned thereon), and (ii) record the modified documents.

c. In the event that the MBTA determines that the MBTA Final Action requires modification or conditions to the conveyance of the Property or mitigation associated therewith as a result of Everett Shops Impacts, but the MBTA and the Wynn Parties are not able to agree on the required modifications, conditions, or mitigation associated therewith pursuant to paragraph (b) above within sixty (60) days of the completion of MEPA review as set forth in Paragraph F(1) and (2) above or such later date as the Wynn Parties, the MBTA, and the Escrow Agent may agree in writing, the Escrow Agent shall promptly confirm through a title examination that no new title encumbrances have been recorded against the Property since the recording of the MBTA Deed, and shall promptly thereafter record the Wynn Deed and the Termination of Easement Agreement, and transmit the Escrow Money to Wynn and the interest earned thereon to the MBTA.

d. In the event that the title examination described in paragraph (c) above reveals title encumbrances that have been recorded against the Property since the recording of the MBTA Deed, the Wynn Parties shall promptly discharge such title encumbrances to the reasonable satisfaction of the MBTA, and thereafter the Escrow Agent shall record the Deed and the Termination of Easement Agreement, and transmit the Escrow Money to Wynn and the interest earned thereon to the MBTA. In the event that the Wynn Parties fail to promptly discharge any such title encumbrances, the MBTA may direct the Escrow Agent to record the Deed and the Termination of Easement Agreement, withhold an amount from the Escrow Money that the MBTA believes is sufficient to discharge any such encumbrances, and transmit the balance of the Escrow Money to Wynn and the withheld portion of the Escrow Money and the interest earned on the Escrow Money to the MBTA.

e. The Wynn Parties hereby covenant and agree that during the term of this Agreement they (i) shall not remove any improvements from nor construct any improvements on the Property; (ii) shall not commence any pre-construction or construction activities on the Property; and (iii) shall otherwise leave the Property in the condition that it was in as of the date of the MBTA Deed, normal wear and tear excepted. In the event that the Wynn Parties are not in compliance with this paragraph (e) as of the date that the Property is to be conveyed to the MBTA pursuant to paragraph (c) or (d) above, the MBTA may direct the Escrow Agent to record the Deed and the Termination of Easement Agreement, withhold an amount from the Escrow Money that the MBTA reasonably believes is sufficient to restore the Property to the condition that it was in as of the date of the MBTA Deed, normal wear and tear excepted, or to compensate the MBTA for any decreased value of the Property caused by the Wynn Parties failure to

comply with this paragraph (e), and transmit the balance of the Escrow Money to Wynn and the withheld portion of the Escrow Money and the interest earned on the Escrow Money to the MBTA.

2. Escrow Agent agrees to hold the Wynn Deed, the Termination of Easement Agreement and the Escrow Money and otherwise take the actions described in this Agreement subject to the following conditions:

a. The Escrow Agent is employed under this Agreement in a ministerial capacity only, and shall act only as provided in this Agreement and shall not be liable to any party for loss or damage resulting therefrom.

b. If there is any dispute among the parties hereto as to whether the Escrow Agent shall disburse any funds or release or record documents or instruments held hereunder, the Escrow Agent may either (i) hold such items until receipt of an authorization in writing signed by all persons having an interest in said dispute; or (ii) file a suit in interpleader in a court of competent jurisdiction, tender such items into court, and obtain an order requiring the parties to litigate their several claims among themselves, upon which event the Escrow Agent shall ipso facto be released and discharged from all obligations and duties under this Agreement.

c. The MBTA and the Wynn Parties shall jointly and severally indemnify and hold the Escrow Agent harmless from and against any and all claims, liability, loss, costs and expenses (including reasonable attorneys' fees and court costs) arising from the performance of the Escrow Agent hereunder, except for any such claim, action or proceeding resulting in a final determination that the Escrow Agent by its own bad faith, negligence or willful misconduct breached the terms hereof. In no event shall Escrow Agent's liability hereunder exceed the aggregate amount of the Escrow Money it is holding.

d. Except for any claim, action or proceeding resulting in a final determination that the Escrow Agent acted in bad faith, negligently or engaged in any type of willful misconduct, the Escrow Agent shall not be responsible for any loss or delay occasioned by the closure or insolvency of the institution with which any Escrow Money is invested in accordance with this Agreement and shall have no liability for interest on such Escrow Money. The Escrow Agent shall not be liable for any loss or delay occasioned by the failure of said financial institution to wire funds in a timely manner.

e. If the Escrow Money is at any time attached, garnished, or levied upon under any court order or if the payment or delivery of the Escrow Money is stayed or enjoined by any court order, or if any order, judgment or decree shall be made or entered by any court affecting the Escrow Money, Escrow Agent is authorized, in its sole discretion, to rely upon and comply with the order, writ, judgment or decree. Escrow Agent shall not be liable to any of the parties or to any other person firm or

corporation by reason of such compliance even though the order, writ, judgment or decree may be subsequently reversed modified, annulled, set aside or vacated.

f. The parties acknowledge that the Escrow Money will be deposited in an interest bearing Money Market account at RBS Citizens Bank ("Citizens"). Furthermore, it is understood and agreed by the parties that should Escrow Agent cease to maintain its escrow accounts with Citizens, and establishes its escrow banking relationship with another national banking institution, that said Escrow Money will transferred to a similar interest bearing account at said institution. Escrow Agent shall not be responsible for (i) any fluctuations in the interest rate applicable to any cash held by it pursuant to or by virtue of this Agreement: (ii) the validity, sufficiency, collectability, or legal effect of any instrument deposited with Escrow Agent.

g. The parties hereto do hereby certify that they are aware that the Federal Deposit Insurance Corporation ("FDIC") coverages apply only to a cumulative maximum amount of $250,000 for each individual depositor for all of depositor's accounts at the same or related institution. The parties hereto further understand that certain banking instruments such as, but not limited to, repurchase agreements and letters of credit are not covered at all by FDIC insurance.

h. Further the parties hereto understand that Escrow Agent assumes no responsibility for, nor will the parties hereto hold Escrow Agent liable for, any loss occurring which arises from the fact that the amount of the above account may cause the aggregate amount of any individual depositor's accounts to exceed $250,000 and that the excess amount is not insured by the FDIC or that FDIC insurance is not available on certain types of bank instruments.

[Remainder of Page Intentionally Left Blank. Signatures Follow.]

IN WITNESS WHEREOF each of the undersigned has caused this instrument to be duly executed and its seal to be affixed thereto as of the day and year first written above.

WYNN MA, LLC

By:_____
Name: Robert J. DeSalvio
Title: President
Hereunto Duly Authorized

EVERETT PROPERTY, LLC

By:_____
Name: Daniel O. Gaquin
Title: Authorized Signatory
Hereunto Duly Authorized

[Signatures continue on next page.]

IN WITNESS WHEREOF each of the undersigned has caused this instrument to be duly executed and its seal to be affixed thereto as of the day and year first written above.

WYNN MA, LLC

By:_____
Name: Robert J. DeSalvio
Title: President
Hereunto Duly Authorized

EVERETT PROPERTY, LLC

By:_____
Name: Daniel O. Gaquin
Title: Authorized Signatory
Hereunto Duly Authorized

[Signatures continue on next page.]

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

By: _____
Name: Francis A. De Paola
Title: Interim General Manager

By: _____
Name: Stephanie Pollack
Title: Secretary & Chief Executive Officer
Massachusetts Department of Transportation

Approved as to form:

By: _____
Name: Lurteen Gannon
Title: Acting First Deputy General Counsel

[Signatures continue on next page.]

Acknowledged and Agreed:

FIDELITY NATIONAL TITLE INSURANCE COMPANY

By: _____
Name: Kevin T Creedon
Title: VP / Counsel

Charlie Baker, Governor
Karyn Polito, Lt. Governor
Frank DePaola, Acting MassDOT Secretary & CEO

massDOT
Massachusetts Department of Transportation

January 29, 2015

Mr. Bob DeSalvio
Wynn MA, LLC
3131 Las Vegas Boulevard
Las Vegas, NV 89109

RE: Notification of Successful Bidder for Sale of Real Property off of Lower Broadway, Everett, Massachusetts

Dear Mr. DeSalvio:

Wynn MA, LLC ("Wynn") is hereby notified of its designation as the successful bidder for the sale of the real property described in that certain Notice of Proposal and Request for Response dated September 3, 2014 (the "RFR"), issued by the Massachusetts Bay Transportation Authority ("MBTA"). No qualified respondents offered better value to the MBTA than the transaction terms stated in the Proposal. The MBTA hereby confirms its acceptance of Wynn's offer consistent with the terms of the RFR and that certain letter agreement by and between Wynn and the MBTA dated August 26, 2014.

We look forward to working with you to consummate this transaction as expeditiously as possible.

Sincerely,

Jeffrey A. Simon
MassDOT Assistant Secretary
Real Estate and Asset Development

Ten Park Plaza, Suite 4160, Boston, MA 02116
Tel: 857-368-4636, TTY: 857-368-0655
www.mass.gov/massdot

QUITCLAIM DEED

WYNN MA, LLC, a Nevada limited liability company with a place of business at 3131 Las Vegas Boulevard, South Las Vegas, NV 89109, and its successors and assigns ("Wynn"), for consideration of Six Million and 00/100 Dollars ($6,000,000.00), the receipt of which is hereby acknowledged, does hereby grant to **MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**, a body politic and corporate and a political subdivision of the Commonwealth of Massachusetts existing pursuant to Massachusetts General Laws, Chapter 161A, with a principal place of business at Ten Park Plaza, Boston, Massachusetts 02116 ("Grantee"), with quitclaim covenants, and subject to all easements, restrictions, reservations and eminent domain takings by third parties of record, those certain parcels of land located off of Lower Broadway, Everett, Massachusetts, containing an aggregate area of approximately 76,594 square feet of land (1.758± acres), including any improvements thereon and appurtenances thereto, if any (the "Premises"), shown as "Parcel 1," "Parcel 2" and "Parcel 3" on a plan (the "Plan") entitled "Approval Not Required Plan, 84 Broadway, Everett, Mass.," prepared by Feldman Land Surveyors, dated January 7, 2014 and recorded as Plan 142 of 2015, Sheet 1 at the Middlesex County (Southern District) Registry of Deeds (the "Registry"), and more particularly described in **Exhibit A** attached hereto.

For Wynn's title see that certain Quitclaim Deed from the Massachusetts Bay Transportation Authority dated February 27, 2015 and recorded with the Registry in Book 64987, Page 327.

The Premises are conveyed subject to a certain Termination of Easement Agreement between the Wynn and Grantee of even date and recorded simultaneously herewith.

Wynn hereby expressly disclaims any representations or warranties of any nature, express or implied or otherwise, except as expressly set forth herein. By accepting this Deed, Grantee agrees that the Wynn has made no representation or warranty about the condition of the Premises, including, without limitation, no representation or warranty about the presence or absence of oil, hazardous materials or hazardous wastes as those terms are defined in the Massachusetts General Laws, Chapter 21E, as from time to time amended (collectively, "Hazardous Materials"), and as further defined in all other applicable state and Federal laws regarding Hazardous Materials on, in, at, over, under, from, through or associated with the Premises; nor has the Wynn made any representation as to the fitness of the Premises for any proposed use, the suitability of the Premises for any particular purpose, or as to the ability of the Grantee to obtain any necessary permits or approvals relating to the Premises. Grantee hereby

accepts the Premises "as is"; including, but not limited to, any Hazardous Materials that may be present on, in, at, over, under, from, through or associated with the Premises. Therefore by accepting and recording this Deed, Grantee, for itself, its successors and assigns, hereby releases the Wynn from any liability because of the condition of the Premises.

In addition, by accepting and recording this Deed, Grantee, for itself, its successors and assigns, agrees: (1) to defend, indemnify and save the Wynn harmless from and against any and all liabilities, losses, damages, costs or expenses (including reasonable attorneys' or other professional fees) of any nature whatsoever, now or thereafter asserted against Wynn and arising out of the ownership or use of the Premises, including without limitation, (a) those related to personal injuries or death, and (b) those by any governmental agency or third party resulting from the presence of Hazardous Materials on the Premises or on any abutting premises not owned by Wynn caused by migration of such Hazardous Materials from the Premises, and (2) not to sue (and not to encourage or assist others to sue) or commence action, claim, counterclaim or cross-claim, or otherwise seek affirmative relief against Wynn arising out of the presence of Hazardous Materials on, in, at, over, under, from, through or associated with the Premises or on any other premises not owned by Wynn because of migration of such Hazardous Materials from the Premises. Any required response action related to the Premises required by a governmental authority shall be performed by Grantee, and its successors and assigns at Grantee's, and its successors' and assigns' sole cost and expense and shall be performed in accordance with Massachusetts General Laws Chapter 21E, the Massachusetts Contingency Plan, and any other Applicable Environmental Laws, defined below.

For the purpose of this Deed, the term "Applicable Environmental Laws" means, without limitation, all state and/or Federal laws, statutes, codes, acts, ordinances, orders, judgments, decrees, injunctions, rules, regulations, permits, licenses, authorizations, directions and requirements, of all governments, departments, and offices, relating in any way to the control and/or abatement of environmental pollution and environmental hazards that now or at any time hereafter may be applicable.

All the terms and provisions of this Deed shall bind and inure to the benefit of Wynn and Grantee respectively and their respective legal representatives, successors and assigns.

[Signature page follows]

IN WITNESS WHEREOF, Wynn has hereunto set its hand and seal this 16 day of April, 2015.

WYNN MA, LLC

By: _____
Name: Robert J. DeSalvio
Title: President
Hereunto Duly Authorized

State of Nevada

Clark, ss

On the 16 day of April, 2015, before me, the undersigned notary public, personally appeared Robert J. DeSalvio proved to me through satisfactory evidence of identification, which was my personal knowledge of the said Robert J. DeSalvio, to be the person whose name is signed on the preceding document, and acknowledged to me that she signed it voluntarily for its stated purpose as President of Wynn MA, LLC.

ROBIN DYER
Notary Public State of Nevada
No. 13-9663-1
My appt. exp. Oct. 15, 2016

Robin Dyer
Notary Public

Exhibit A

Legal Description

PARCEL 1

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE INTERSECTION OF THE NORTHEASTERLY SIDELINE OF HORIZON WAY, AND THE SOUTHWESTERLY SIDELINE OF THE 1985 CITY LAYOUT OF BROADWAY;

THENCE RUNNING N 56°25'41" W, ALONG SAID HORIZON WAY, A DISTANCE OF 62.40 FEET TO A POINT;

THENCE RUNNING N 51°39'39" W, A DISTANCE OF 25.02 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 51°39'39" W, BY SAID HORIZON WAY, A DISTANCE OF 150.67 FEET TO A POINT OF NON-TANGENCY;

THENCE RUNNING BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 219.60 FEET, AN ARC LENGTH OF 247.07 FEET, A CHORD BEARING OF N 68°31'37" E AND A CHORD DISTANCE OF 234.25 FEET TO A POINT OF NON-TANGENCY;

THENCE TURNING AND RUNNING S 65°49'25" E, A DISTANCE OF 18.45 FEET TO A POINT. THE PREVIOUS TWO COURSES BEING BY LAND NOW OR FORMERLY OF THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY;

THENCE TURNING AND RUNNING S 34°11'46" W, BY LAND NOW OR FORMERLY VMA CORPORATION, A DISTANCE OF 207.53 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 22,511 SQUARE FEET.

PARCEL 2

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE INTERSECTION OF THE SOUTHEASTERLY SIDELINE OF CHARLTON STREET AND THE SOUTHERLY SIDE OF BOWDOIN STREET;

THENCE RUNNING S 34°11'46" W, BY SAID CHARLTON STREET, A DISTANCE OF 194.65 FEET TO A POINT OF TANGENCY;

THENCE RUNNING BY A CURVE TO THE RIGHT, HAVING A RADIUS OF 100.00 FEET AND AN ARC DISTANCE OF 24.24 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING S 55°52'08 E, BY LAND NOW OR FORMERLY OF CHARLESTON LOFTS CONDOMINIUM, A DISTANCE OF 2.92 FEET TO A POINT;

THENCE TURNING AND RUNNING S 34°11'46" W, BY LAND NOW OR FORMERLY OF WW. GRAINGER, INC., NOW OR FORMERLY OF SELF STORAGE BROADWAY LLC., AND NOW OR FORMERLY OF GOLDEN ARCHES LIMITED PARTNERSHIP, A DISTANCE OF 522.34 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°48'14" W, BY LAND NOW OR FORMERLY OF MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA), A DISTANCE OF 50.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 34°11'46" E, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 285.31 FEET TO A POINT OF NON-TANGENCY;

THENCE RUNNING BY AN ARC TO THE LEFT, HAVING A RADIUS OF 89.76 FEET, AN ARC LENGTH OF 150.95 FEET, A CHORD BEARING OF N 56°38'12" W, AND A CHORD LENGTH OF 133.78 FEET TO A POINT OF CUSP;

THENCE TURNING AND RUNNING N 76°08'36" E, A DISTANCE OF 217.03 FEET TO A POINT ON THE SOUTHERLY SIDE OF BRICK YARD LANE;

THENCE TURNING AND RUNNING N 60°32'22" E, BY SAID BRICK YARD LANE, AND SAID CHARLTON STREET, A DISTANCE OF 63.81 FEET TO A POINT OF TANGENCY;

THENCE RUNNING BY A CURVE TO THE LEFT, HAVING A RADIUS OF 100.00 FEET AND AN ARC LENGTH OF 21.74 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 30,753 SQ. FT.

PARCEL 3

A CERTAIN PARCEL OF LAND SITUATED IN THE CITY OF EVERETT, COUNTY OF MIDDLESEX AND THE COMMONWEALTH OF MASSACHUSETTS MORE PARTICULARLY DESCRIBED AS FOLLOWS;

COMMENCING AT A POINT ON THE TERMINUS OF THE NORTHWESTERLY SIDELINE OF HORIZON WAY;

THENCE RUNNING N 00°30'21" E, A DISTANCE OF 686.85 FEET TO THE POINT OF BEGINNING;

THENCE RUNNING N 00°30'21" E, BY LAND NOW OR FORMERLY OF WYNN MA, LLC, A DISTANCE OF 30.30 FEET TO A POINT;

THENCE TURNING AND RUNNING N 31°25'12" E, BY LAND NOW OR FORMERLY OF WYNN MA, LLC, A DISTANCE OF 96.60 FEET TO A POINT;

THENCE TURNING AND RUNNING N 40°38'05" E, BY LAND NOW OR FORMERLY OF MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA), A DISTANCE OF 510.69 FEET TO A POINT;

THENCE TURNING AND RUNNING N 52°47'13" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 24.72 FEET TO A POINT;

THENCE TURNING AND RUNNING N 55°40'32" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 112.00 FEET TO A POINT;

THENCE TURNING AND RUNNING N 76°08'36" E, BY LAND NOW OR FORMERLY OF EVERETT PROPERTY, LLC, A DISTANCE OF 25.13 FEET TO A POINT;

THENCE TURNING AND RUNNING S 56°52'34" W, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 49.57 FEET TO A POINT;

THENCE TURNING AND RUNNING S 40°38'05" W, BY LAND NOW OR FORMERLY OF SAID MBTA, A DISTANCE OF 734.40 FEET TO THE POINT OF BEGINNING.

CONTAINING AN AREA OF 23,330 SQUARE FEET.

Exhibit B

Response Forms

Form 1 – Response

Form 2 – Beneficial Interest Disclosure Statement

Form 3 – Certifications of Compliance

Form 4 – Conflict of Interest Certification

FORM 2: BENEFICIAL INTEREST DISCLOSURE STATEMENT

Pursuant to G. L. c. 7C, § 38, the undersigned Robert DeSalvio
(Name)

Senior Vice President of Wynn MA, LLC
(Title) (Prospective Purchaser's Name)

certifies as follows:

1. Set forth below are the true names and addresses of **all** persons who have or will have a direct or indirect beneficial interest in the land of the Massachusetts Bay Transportation Authority ("MBTA") located off of Lower Broadway, Everett, Massachusetts and more particularly described in that certain Notice of Proposal and Request for Response dated September 3, 2014, including, without limitation, prospective purchasers. Please note: **Do not write "none."**

   Name Address

   Wynn MA, LLC ("Wynn MA") is a wholly-owned subsidiary of Wynn Resorts, Limited ("Wynn Resorts"). Wynn Resorts is a Nevada corporation with a principal place of business at 3131 Las Vegas Blvd. South, Las Vegas, NV 89109. Wynn Resorts is traded on NASDAQ (WYNN: NASDAQ).

2. **None** of the above-mentioned persons is (i) an employee of the MBTA, Massachusetts Realty Group, Greystone & Co., Inc. or Jones Lang LaSalle Americas, Inc. or (ii) an official elected to public office in the Commonwealth of Massachusetts, **except** as listed below. Please note: **If none, write "none"; do not leave blank.**

Name	Employer	Title
None.		

Signed under the penalties of perjury on September 4, 2014.

Signature of person whose name and title appear at the top of this form

FORM 3: CERTIFICATIONS OF COMPLIANCE

The undersigned Robert DeSalvio (Name), Senior Vice President (Title)

of Wynn MA, LLC (Prospective Purchaser), whose principal place of business

is located at: 3131 Las Vegas Blvd. South, Las Vegas, NV 89109,

hereby certify that the following statements are correct:

1. Non-Collusion

This response is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this statement, the word "person" means any natural person, joint venture, partnership, corporation or other business or legal entity.

2. Tax and Employment Security Compliance

Pursuant to G. L. c. 62C, § 49A and G. L. c. 151A, § 19A(b), the above-named prospective purchaser has complied with:

i. all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support, and

ii. all laws of the Commonwealth of Massachusetts relating to employment-security contributions and payments in lieu of contributions.

3. Good Standing

The above-named prospective purchaser (i) has filed with the Secretary of the Commonwealth for the Commonwealth of Massachusetts all registrations, certificates and annual reports required by law, and (ii) if the prospective purchaser is a corporation or limited liability company, such entity is in good standing and qualified to do business in the Commonwealth of Massachusetts.

4. Debarment and Other Ineligibility

The above-named prospective purchaser certifies that it is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from providing goods and/or services to the Commonwealth of Massachusetts or the United States of America pursuant to any applicable debarment or suspension provision of federal or state law or any rules or regulations promulgated thereunder.

5. Northern Ireland Transactions

Pursuant to G. L. c. 7, §§ 22C-F, the above-named prospective purchaser certifies that (***check applicable statements***):

I. _x_ The prospective purchaser does not employ ten or more employees in an office or other facility in Northern Ireland.

II. _____ The prospective purchaser employs ten or more employees in an office or other facility located in Northern Ireland and further certifies that:

a. _____ The prospective purchaser does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief, and

b. _____ The prospective purchaser promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and

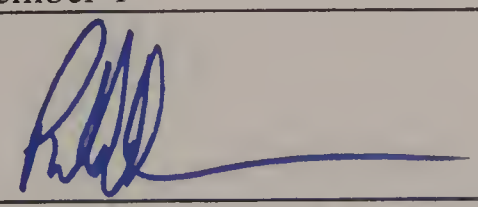
c. _____ The prospective purchaser is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.

III. _____ The prospective purchaser does not certify to the statements set forth in Item I or Item II(a-c) above.

6. Dependent Care Assistance

The above-named prospective purchaser hereby certifies that, if selected as the successful bidder for the sale transaction described in that certain Notice of Proposal and Request for Response issued by the Massachusetts Bay Transportation Authority on September 3, 2014, relating to certain parcels of land off of Lower Broadway, Everett, Massachusetts, Purchaser shall comply, to the extent required by law, with Section 7 of Chapter 521 of the Acts of 1990, as amended by Chapter 329 of the Acts of 1991, and the regulations issued pursuant thereto, 102 C.M.R. 12.00.

Signed under the penalties of perjury on September 4, 2014.



Signature of person whose name and title appear at the top of this form

FORM 4: CONFLICT OF INTEREST CERTIFICATION

The undersigned Robert DeSalvio (Name), Senior Vice President (Title)

of Wynn MA, LLC ("Purchaser"), hereby certifies

that:

1. Purchaser shall comply with Massachusetts Conflict of Interest Laws, G.L. c. 268A;

2. Purchaser has no real or perceived conflict of interest in relation to the transactions contemplated by that certain Notice of Proposal and Request for Response dated September 3, 2014, issued by the Massachusetts Bay Transportation Authority and relating to certain land located off Lower Broadway, Everett, Massachusetts (collectively, the "Transaction"); and

3. Purchaser shall take any action and supply any information necessary or appropriate should a conflict of interest arise in connection with the Transaction.

Signature of person whose name and title appear at the top of this form

September 4, 2014
Date

Massachusetts Bay Transportation Authority

Notice of Proposal
and
Request for Response

Sale of Land off Lower Broadway
Everett, Massachusetts

September 3, 2014

MASSACHUSETTS REALTY GROUP
REAL ESTATE CONSULTANTS TO THE MBTA

Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
617-316-1654
www.mbtarealty.com

A. Introduction

The Massachusetts Bay Transportation Authority ("MBTA") has received an offer from Wynn MA, LLC ("Wynn") to purchase "as is" certain real property located off of Lower Broadway, Everett, Massachusetts (the "Property"), according to the terms and conditions set forth in the agreement attached hereto as Exhibit A (the "Proposal"). The Proposal incorporates by reference a plan entitled "Proposal of Land Acquisitions," dated May 20, 2014, prepared by AECOM Technical Services, Inc. (the "Plan"), a copy of which is included in Exhibit A.

The MBTA, through its designated representative, Massachusetts Realty Group, seeks responses to this Notice of Proposal and Request for Response (this "RFR") from any persons wishing to provide better value to the MBTA in connection with the sale of the Property than the transaction terms set forth in the Proposal. Consistent with its enabling statute, Massachusetts General Laws Chapter 161A, the MBTA with this offering seeks to maximize non-fare revenues and to achieve the best value for the MBTA through an open, competitive process.

The schedule for this offering is tentatively expected to proceed as follows:

Event	Date
RFR Available	September 3, 2014
Deadline for Written Questions	September 16, 2014 at 5:00 PM
Pre-Response Conference	September 18, 2014 at 11:00 AM
Response Deadline	October 3, 2014 at 11:00 AM

Should the MBTA alter or supplement this RFR, such amendments will be distributed in the form of addenda to the RFR to all interested parties who register as potential respondents via the Massachusetts Realty Group website, http://www.mbtarealty.com, or by contacting Thomas Cox, Massachusetts Realty Group, 20 Park Plaza, Suite 1120, Boston, Massachusetts 02116, (617) 316-1670, tcox@greyco.com.

B. Proposal

The purpose of this RFR is to invite responses from persons seeking to provide the MBTA with better value for the "as is" sale of the Property than the terms set forth in the Proposal.

Please see the attached Exhibit A for further information about the Proposal. The Property shall remain subject to all existing encumbrances and encroachments, except as set forth in the response. The MBTA shall retain an easement for vehicular and pedestrian access across the land shown as Parcel One on the Plan unless and until such time as the purchaser of the Property constructs operationally equivalent substitute access to the MBTA's remaining land. The respondent's proposed use must not be inconsistent with or materially interfere with the MBTA's use and operation of its adjacent land and the facilities located thereon.

C. Response Requirements

Qualified responses shall include (i) a complete, duly executed original of each of the response forms attached hereto as Exhibit B, (ii) a certified bank or cashier's check payable to the MBTA in an amount equal to twenty-five percent (25%) of the offered purchase price, to be held as a deposit in accordance with the terms set forth in this RFR, and (iii) for respondents that are corporations or limited liability companies, a Certificate of Good Standing issued by the Secretary of the Commonwealth for the Commonwealth of Massachusetts or reasonably equivalent evidence of legal existence and good standing. Incomplete submissions or submissions on response forms containing alterations, additional terms or conditions may be deemed non-responsive and rejected in the sole discretion of the MBTA.

All responses must include 1 signed original, 3 paper copies and 1 electronic (PDF format) copy of the response including all of the required forms attached to this RFR as Exhibit B. Responses must be received at the following address on or before the response deadline of October 3, 2014 at 11:00 AM:

Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
Attention: Thomas Cox

All responses must be submitted in a sealed envelope clearly marked "RESPONSE FOR MBTA PROPERTY LOCATED OFF LOWER BROADWAY, EVERETT, MASSACHUSETTS." The envelope must also show the name, address, telephone number and email address of the person(s) submitting the response.

Any response received after the deadline specified will be considered a late response. A late response shall not be considered for award unless the MBTA determines that it is in the best interests of MBTA to do so.

All inquiries concerning this RFR must be made in writing and addressed to Thomas Cox at Massachusetts Realty Group, 20 Park Plaza, Suite 1120, Boston, MA 02116 or tcox@greyco.com (email preferred). Prospective respondents should note that all requests for clarifications and exceptions, including those relating to the terms and conditions of the proposed sale, must be submitted prior to submission of a response and no later than the deadline for written questions of September 16, 2014 at 5:00 PM.

A Pre-Response Conference will be held at the MBTA's offices at 10 Park Plaza, Boston, Massachusetts on September 18, 2014 at 11:00 AM.

Answers to all questions of a substantive nature will be provided to all prospective respondents whose contact information is known, in the form of an addendum to this RFR. This RFR and any addenda will be posted on the Massachusetts Realty Group's website (http://www.mbtarealty.com). Respondents should provide contact information to the Massachusetts Realty Group staff person listed above in order to ensure that they receive any addenda. It is the responsibility of respondents to ensure that they receive all information pertaining to this RFR. Respondents should not contact any staff member of Massachusetts

Realty Group or the MBTA except as provided above.

This RFR does not represent an offer or commitment by the MBTA to enter into an agreement with a respondent or to pay any costs incurred in the preparation of a response to this RFR. The responses and any information made as part of the responses will not be returned to respondents. This RFR and the selected respondent's response to this RFR, may, by reference, become a part of any formal agreement between the MBTA and the respondent resulting from this solicitation.

MBTA reserves the right to (i) waive portions of the RFR for all respondents, (ii) excuse minor informalities in any response, (iii) discuss any provision of any response with the respondent in order to clarify the response, (iv) request all respondents who submitted qualifying responses to submit best-and-final offers, (v) reject any part of any response, and (vi) reject all responses.

D. Minimum Qualifying Responses

Responses shall be evaluated on the basis of the highest overall value to the MBTA offered by a responsive and eligible respondent. Responses will be ranked based on both economic and non-economic criteria, including, without limitation, the following factors:

- Proposed price for purchasing the Property;
- Economic value to the MBTA of any non-cash elements proposed in the response;
- Impact on the MBTA's operations; and
- Respondent's capacity to cover any obligations proposed in the response.

While purchase price will be an important factor in the evaluation of responses, the MBTA is not required to select the highest purchase price offered. Rather, the MBTA shall select the response that demonstrates the "best value" overall and that meets the objectives stated in this RFR. The MBTA reserves the right to negotiate with respondents.

A respondent shall be deemed responsive and eligible if: (i) all required response forms are complete, (ii) the respondent is in good standing with the MBTA and the Commonwealth of Massachusetts, and (iii) the respondent provides sufficient information regarding experience and qualifications to carry out the transactions contemplated by this RFR.

A qualifying response must be accompanied by a deposit of certified funds in the amount of twenty-five percent (25%) of the purchase price set forth in the response. If the respondent is declared the successful bidder for the Property, the deposit becomes non-refundable and may be retained by the MBTA if the respondent fails to complete the purchase of the Property in accordance with the agreed transaction terms. The deposit paid by the successful bidder will be credited to the purchase price at the closing of the sale of the Property. If a respondent is the second or third ranked bidder, the MBTA may elect to retain the respondent's deposit for a diligence period ending not later than November 7, 2014.

Acceptance of the highest ranked response or BAFO (as defined below) may be subject to a vote by the MBTA Board of Directors approving the proposed terms of the sale.

E. Successful Bidder Designation

After preliminary identification of the best value bid submitted by a responsive and eligible bidder, the MBTA shall conduct due diligence and designate the successful bidder, subject to the MBTA's right to solicit best and final offers as described below. Wynn shall be designated the successful bidder if no qualified respondents offer better value to the MBTA than the transaction terms stated in the Proposal. A written notice of the successful bidder designation will be sent to the successful bidder in a timely fashion.

All awards by the MBTA shall be made in strict compliance with Massachusetts General Laws, Chapter 161A. The MBTA shall not discriminate on the basis of race, creed, color, sex, national origin, disability or sexual orientation in consideration for an award.

F. Best and Final Offer

The MBTA may determine that it is in its best interest to solicit a second round of bids as best and final offers ("BAFOs") from bidders with eligible and responsive bids. In this event, Massachusetts Realty Group will contact all of the eligible and responsive bidders to provide BAFO forms and instructions. In the event an invited bidder does not submit a new bid, the MBTA will consider that as a restatement of the bid already received. The bidder who submits the BAFO bid providing the MBTA with the best value shall be deemed the successful bidder subject to MBTA conducting final due diligence.

G. Other Terms and Conditions

1. Closing Date

The closing of the sale of the Property shall take place at MBTA's offices at 10 Park Plaza, Boston, Massachusetts at 11:00 AM on a date within one hundred eighty (180) days of the designation of the successful bidder. The successful bidder must give the MBTA not less than fifteen (15) days' written notice of the closing date. If the successful bidder fails to close the transaction within the specified time period, then (i) the MBTA has the right to retain the successful bidder's deposit as liquidated damages, and (ii) all obligations of the MBTA to the successful bidder shall cease.

2. No Representations or Warranties

The successful bidder shall be responsible for determining and verifying all title information pertaining to the Property, subject only to the MBTA's satisfaction of the title requirements set forth in the Proposal. The MBTA makes no representation as to the fitness of the Property for any proposed use, the suitability of the Property for any particular purpose, or as to the ability of the successful bidder to obtain any necessary permits or approvals relating to the Property. The successful bidder shall be responsible for identification of and compliance with all current laws, regulations, ordinances, rules, regulations and approvals that may be applicable to the Property and any proposed uses of the Property. Without limiting the generality of the foregoing, the successful bidder shall be responsible for all necessary regulatory and permitting approvals associated with the use of the Property after closing. The successful bidder's inability to obtain any permitting approvals necessary to successful bidder's plans for the development

and use of the Property shall not relieve the successful bidder of its obligation to perform under its agreement to purchase the Property.

The successful bidder shall accept the Property in its "as is" condition with "all faults", without any warranty or representation by the MBTA, its agents or representatives whatsoever relating to the Property. The successful bidder shall not rely on any representation or inducement which may have been made or implied by the MBTA or any party acting on behalf of the MBTA with respect to the Property. The MBTA hereby expressly disclaims any warranties of any nature, express or implied or otherwise, except as expressly set forth in this RFR or the Proposal, including without limitation, anything related to the presence of "oil", "hazardous materials" or "hazardous wastes" as those terms are defined in Massachusetts General Laws Chapter 21E and regulations promulgated by the Massachusetts Department of Environmental Protection (collectively, "Hazardous Materials"), and as further defined in all other applicable state and federal laws regarding Hazardous Materials on, in, at, over, under, from, through or associated with the Property.

3. Incorporation of RFR Into Response

All of the terms, conditions, specifications, exhibits and information included in this RFR shall be incorporated by reference into each response. No conditions other than those specified in this RFR will be accepted and conditional bids may be disqualified except as stated in this RFR or determined by the MBTA.

4. Property Investigation

The successful bidder shall be solely responsible for verifying any and all physical or other site conditions of the Property. The successful bidder, at the successful bidder's expense, may investigate the Property pursuant to a license for entry which may be issued by the MBTA in accordance with the procedures and requirements outlined at https://www.mbtarealty.com/licenses.html, including, without limitation, the successful bidder's agreement to all of the approval, indemnification and insurance requirements set forth in the standard license forms posted on the website. The MBTA shall waive its usual administrative fee and license fee for the successful bidder. The successful bidder must submit all results and reports relating to inspection of the Property to the MBTA and Massachusetts Realty Group.

5. Survey

The successful bidder will be responsible for retaining a licensed surveyor to prepare a plan in recordable form showing the precise boundaries of the Property (the "Survey"). The Survey shall be subject to the MBTA's reasonable approval. Any modifications to the Survey required by the MBTA shall be completed at the expense of the successful bidder. The successful bidder shall be responsible for obtaining all necessary local approvals and endorsements required to record the plan with the Middlesex County (Southern District) Registry of Deeds at or before closing, including, without limitation, any "Approval Not Required" endorsement or subdivision approval which may be required by law.

6. Indemnification and Release

The deed conveying the Property from the MBTA to the successful bidder shall require the successful bidder to indemnify, defend (at the option of the MBTA) and hold the MBTA harmless from and against any and all liabilities, losses, damages, costs, expenses (including reasonable attorneys' expenses and fees), causes of action, suits, claims, demands or judgments of any nature whatsoever related to Hazardous Materials that may be imposed upon, incurred by, or asserted against the MBTA because of the condition of the Property at closing. The indemnification for Hazardous Materials includes indemnification for the presence of existing Hazardous Materials on, in, at, under or from the Property. In addition, the successful bidder shall agree not to sue or commence action, claim, counterclaim or cross-claim, or otherwise seek affirmative relief against the MBTA arising out of the condition of the Property at closing, including, but not limited to, the presence of Hazardous Materials on, in, at, under or from the Property. Any required response action related to the Property required by a governmental authority shall be performed by successful bidder at successful bidder's sole cost and shall be performed in accordance with Massachusetts General Laws Chapter 21E, the Massachusetts Contingency Plan, and any other applicable statutes and regulations.

The foregoing provisions of indemnity and release shall be binding on the successful bidder and its successors and assigns and shall run with the land.

7. Response and Pre-Closing Costs

Respondents shall be entirely responsible for any and all expenses they incur preparing and/or submitting any responses to this RFR including any costs or expenses resulting from the issuance, extension, supplementation, withdrawal, or amendment of this RFR. Any and all expenses incurred by the successful bidder prior to closing will be the responsibility of the successful bidder and entirely at its own risk.

8. MBTA Departmental Reviews

The successful bidder may be required to work with all appropriate MBTA departments to ensure that the use and development of the Property does not materially interfere with the MBTA's use of its adjacent land. All plans as well as permit applications and submittals relating to the Property and/or the new access way connecting the MBTA's remaining land with Lower Broadway must be reviewed and approved in writing by the MBTA prior to submittal. The successful bidder must submit its equipment, construction plans and specifications including timetables to the MBTA for review to assure that construction will have no adverse impact on MBTA operations. Be advised that the MBTA departments may have conditions with which the successful bidder will be required to comply, including, but not limited to insurance and bonding requirements. It may be required that the successful bidder enter into a Construction Agreement with the MBTA memorializing how the construction will occur while minimizing conflict with MBTA operations.

9. Appeals and Protests

Appeals/Protests relative to this RFR will be reviewed and adjudicated in accordance with the MBTA's Appeals/Protest Procedures – Goods & Services. A copy of these procedures is available by contacting the MBTA Materials Department.

10. Public Records

Respondents should assume that all material submitted in response to the RFR will be open to the public. To the extent allowed by Massachusetts public records laws, the MBTA will use best efforts not to disclose or make public any pages of a response on which the respondent has stamped or imprinted "confidential." Confidential data will be limited to confidential financial information concerning the respondent's organization. Neither the MBTA nor Massachusetts Realty Group assumes any liability for disclosure or use of any information or data.

Exhibit A

Proposal

[Attach letter agreement between Wynn and MBTA dated August 26, 2014]

RESORTS DEVELOPMENT

Wynn.

August 26, 2014

Jeffrey A. Simon
Massachusetts Department of Transportation
10 Park Plaza
Boston, MA 02116

Re: Land in Everett

Dear Mr. Simon:

Wynn MA, LLC ("Buyer") hereby submits the following offer to acquire certain property of the Massachusetts Bay Transportation Authority ("MBTA") in Everett, Massachusetts defined below.

Property: The subject property consists of three (3) parcels of land currently owned by the MBTA as part of or adjacent to the Everett Shops on Lower Broadway in Everett, Massachusetts, which are shown on the plan attached hereto as Exhibit A and more particularly described as follows:

Proposed Parcel One: A triangular parcel located in the south east corner of the MBTA parcel containing approximately 0.52 acres of land and containing the current main entrance of MBTA parcel.

Proposed Parcel Two: A rectangular parcel running along the north east edge of the MBTA parcel containing approximately 0.54 acres measuring approximately 50' by 440'.

Proposed Parcel Three: A rectangular parcel running along the north west edge of the MBTA parcel containing land approximately 0.964 acres measuring approximately 60'by 630'.

The exact location and dimensions of the foregoing parcels are subject to mutual agreement and shall be confirmed by survey and creation of final legal descriptions.

The transfer of these parcels will facilitate the relocation of the main entrance to the MBTA Everett Shops site from Horizon Way to a new location off Lower Broadway which provides substantially equivalent operational access for the MBTA. The new access would be from a new public street that would connect to a new, improved, signalized intersection at Lower Broadway. An

3131 las vegas boulevard south las vegas NV 89109 tel (702) 770 7000

example of such operationally equivalent substitute access is shown on Exhibit A, highlighted in yellow. Parcel One would be conveyed subject to the MBTA's reservation of an easement providing access to the Everett Shops property from Horizon Way consistent with the MBTA's current use, provided that, upon Buyer providing the substantially equivalent substitute access, the MBTA would release such easement and all rights in and to Horizon Way.

Purchase Price: Cash consideration of Six Million Dollars ($6,000,000.00).

As part of the relocation of the existing main entrance of the MBTA Everett Shops site to a new, substitute access drive as provided above, Buyer shall (i) construct an improved access drive from Lower Broadway to the MBTA site, which shall meet the standard for public ways in Everett, MA, and (ii) provide signalization and related improvements to the connecting intersection at Lower Broadway in accordance with applicable City of Everett requirements.

Deposit: Twenty-Five Percent (25%) of the cash consideration or One Million Five Hundred Thousand Dollars ($1,500,000.00) (the "Deposit"), which has been paid by Buyer with the submission of this proposal and shall be non-refundable, except if Buyer is the successful bidder for the Property and the MBTA fails or refuses to proceed with the sale of the Property to Buyer in accordance with this offer. The Deposit shall be liquidated damages and the MBTA's sole remedy in the event Buyer fails to complete the purchase of the Property in accordance with this offer.

Closing: The Closing shall take place at the MBTA's offices at 10 Park Plaza, Boston, Massachusetts, at 11:00 a.m. on a date designated by Buyer within one hundred eighty (180) days of the conclusion of the bid process and the MBTA's confirmation of its acceptance of Buyer's offer. Buyer shall designate a date for closing by providing at least fifteen (15) days' prior written notice. Buyer shall have the right to postpone the Closing by up to one hundred eighty (180) days upon written notice to the MBTA, which written notice must be received by the MBTA prior to the expiration of the initial one hundred eighty day (180) day period.

RESORTS DEVELOPMENT

Wynn.

Use: The Property shall be used (i) to facilitate the relocation of the main entrance to the MBTA Everett Shops site from Horizon Way to a new location off Lower Broadway as provided herein, and (ii) in a manner that is (a) consistent with the City of Everett Lower Broadway Master Plan and applicable zoning regulations and approved by the City of Everett, and (b) not inconsistent with and will not materially interfere with use and operation of the Everett Shops property by the MBTA.

Condition Of Property; Title: The Property will be delivered at Closing in as-is condition, free of all tenants and occupants and any personal property, equipment, trash or debris. The Property will be conveyed to Buyer or its nominee by a Massachusetts quitclaim deed, free of all mortgages or other monetary liens or any encumbrances or encroachments which would prohibit, limit or adversely affect the use of the Property for its intended purposes.

Advertising; Bid Process: Buyer acknowledges that this Offer is subject to the advertisement and bid requirements of M.G.L. c. 161, Sec. 5(b). Upon acceptance of this Offer, the MBTA agrees to promptly proceed to satisfy such requirements as soon as reasonably practicable. If no competing bids are received or no bids equal or exceed Buyer's bid, the MBTA shall promptly notify Buyer and confirm the MBTA's unconditional acceptance of Buyer's offer in writing. In the event the MBTA receives any bid equal to or in excess of Buyer's offer, the MBTA shall notify Buyer and proceed to a last and final round of bidding which shall include Buyer. In the event the MBTA ultimately receives and accepts a bid with value in excess of Buyer's bid, the MBTA shall notify Buyer thereof in writing and promptly return the Deposit to Buyer.

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RESORTS DEVELOPMENT

The terms of this offer will expire at 5:00 p.m. (EDT) on August 26, 2014, unless accepted by the MBTA. If the general terms of this letter are acceptable, please sign two copies of this letter in the space below, keep one for your files, and return one to me.

Sincerely,

Bob DeSalvio

Bob DeSalvio
Senior Vice President

Agreed to and accepted this 26th day of August, 2014.

Massachusetts Bay Transportation Authority

Name: Richard A. Davey
Title: Secretary & CEO

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Exhibit B

Response Forms

Form 1 – Response

Form 2 – Beneficial Interest Disclosure Statement

Form 3 – Certifications of Compliance

Form 4 – Conflict of Interest Certification

FORM 1: RESPONSE

Reference is made to a certain Notice of Proposal and Request for Response, dated September 3, 2014, issued by the Massachusetts Bay Transportation Authority, through its designated representative Massachusetts Realty Group, relating to certain parcels of land located off of Lower Broadway, Everett, Massachusetts (together with all exhibits and as may be amended from time to time, the "RFR"). Capitalized terms used in this form, unless otherwise defined herein, shall have the meanings ascribed to such terms in the RFR.

The undersigned (the "Respondent") affirms that it has read and fully understands the terms and conditions set forth in the RFR, and hereby agrees to all such terms and conditions.

1. The Respondent hereby irrevocably submits to MBTA an offer to purchase certain property of the MBTA in Everett, Massachusetts, subject to the terms and conditions set forth in the RFR, as further set forth below.

2. Describe the property to be purchased (the "Property"). The exact location and dimensions of the parcels to be purchased are subject to mutual agreement and shall be confirmed by survey and creation of final legal descriptions.

3. The Respondent hereby irrevocably submits an offer to purchase the Property for

   cash consideration of_____ Dollars

   ($_____) (the "Cash Consideration") and non-cash consideration of *(Describe any non-cash elements of value proposed to be*

   provided to the MBTA): _____

   _____.

4. The Respondent herewith submits to the MBTA a cash deposit equal to twenty-five percent (25%) of the Cash Consideration offered (the "Bid Deposit"), being:

   _____ Dollars ($_____)
   in the form of a certified bank or cashier's check made payable to the MBTA. If the Respondent is declared the successful bidder for the Property, the Bid Deposit shall be **non-refundable** and may be retained by the MBTA as liquidated damages in the event the Respondent fails to complete the purchase of the Property in accordance with this Response. If the MBTA is unable to deliver the Property in accordance with the terms of the RFR and this response, the MBTA shall return the Bid Deposit to the Respondent. Any interest earned on the Bid Deposit prior to closing of the sale of the Property shall be the property of the MBTA. If the Respondent is declared the second or third highest ranked bidder, the MBTA may retain the Respondent's Bid Deposit for a diligence period ending not later than November 7, 2014.

5. At the closing of the sale of the Property, the Bid Deposit shall be credited against the total Cash Consideration due. The Respondent must pay the balance of the Cash Consideration in immediately available funds at closing.

6. Describe on one or more attached sheets the measures that Respondent shall take at Respondent's sole cost and expense to ensure that the MBTA is continuously provided with adequate operational access from the MBTA's remaining land to Lower Broadway. Such access must be operationally equivalent to or better than MBTA's current access over Horizon Way and the land shown as Parcel One on the Plan.

7. Describe on one or more attached sheets the Respondent's proposed use of the Property (the "Use"). The Respondent hereby certifies that the Use is not inconsistent with and shall not materially interfere with the MBTA's use and operation of its adjacent land and the facilities located thereon. The Respondent acknowledges that Respondent's representation regarding the Use is a material inducement for the MBTA to enter into the transaction described in the RFR.

8. The Respondent acknowledges and agrees that the Respondent's expenses related to preparation of this response and the consummation of the transaction contemplated in this RFR are the Respondent's sole responsibility.

9. The Respondent agrees to accept the Property in its "as is" condition, with all faults, including, without limitation, any environmental conditions existing on or affecting the Property, except to the extent of any express representations or warranties contained in the RFR or the Proposal. The MBTA expressly disclaims any warranties of any nature, express or implied, except as expressly set forth in the RFR or the Proposal. Without limiting the generality of the foregoing, the MBTA expressly disclaims any warranties related to the presence of "oil," "hazardous materials" or "hazardous wastes" as those terms are defined in Massachusetts General Laws Chapter 21E, the regulations promulgated by the Massachusetts Department of Environmental Protection, and any other applicable federal, state and local laws.

10. The Respondent acknowledges that the MBTA reserves the right to reject any and all responses in whole or in part and then to advertise for new responses or otherwise deal with the Property as may be in the best interest of the MBTA, consistent with Massachusetts General Laws Chapter 161A.

11. The Respondent hereby authorizes and requests each of the persons, firms, financial institutions and other third parties named in any of the materials Respondent has submitted to the MBTA in connection with the RFR and this response (collectively, the "Response") to furnish to the MBTA and its designated representative, Massachusetts Realty Group, all information reasonably requested for the purpose of verifying the statements made in the Response.

12. The Respondent certifies under penalties of perjury that the all of the information and statements contained in the Response are true, accurate and complete to the best of the Respondent's knowledge. The Respondent agrees that, in the event that statements or information contained in the Response become inaccurate, the Respondent shall promptly notify Massachusetts Realty Group in writing. The Respondent acknowledges and understands that a material misstatement, omission or failure to update information may be cause for the MBTA to reject the Response and may have the effect of precluding the Respondent from doing business with the MBTA in the future.

This Response is executed as of this _____ day of _____, 2014.

Print Name of Bidder: _____

Duly Authorized Signature: _____

Print Name of Signatory: _____

Title of Signatory: _____

FORM 2: BENEFICIAL INTEREST DISCLOSURE STATEMENT

Pursuant to G. L. c. 7C, § 38, the undersigned _____
(Name)

_____ of _____
(Title) (Prospective Purchaser's Name)

certifies as follows:

1. Set forth below are the true names and addresses of **all** persons who have or will have a direct or indirect beneficial interest in the land of the Massachusetts Bay Transportation Authority ("MBTA") located off of Lower Broadway, Everett, Massachusetts and more particularly described in that certain Notice of Proposal and Request for Response dated September 3, 2014, including, without limitation, prospective purchasers. Please note: **Do not write "none."**

Name	Address

2. **None** of the above-mentioned persons is (i) an employee of the MBTA, Massachusetts Realty Group, Greystone & Co., Inc. or Jones Lang LaSalle Americas, Inc. or (ii) an official elected to public office in the Commonwealth of Massachusetts, **except** as listed below. Please note: **If none, write "none"; do not leave blank.**

Name	Employer	Title

Signed under the penalties of perjury on _____, 2014.

_____
Signature of person whose name and title appear at the top of this form

FORM 3: CERTIFICATIONS OF COMPLIANCE

The undersigned _____, _____
(Name) (Title)

of _____, whose principal place of business
(Prospective Purchaser)

is located at: _____,

hereby certify that the following statements are correct:

1. Non-Collusion

This response is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this statement, the word "person" means any natural person, joint venture, partnership, corporation or other business or legal entity.

2. Tax and Employment Security Compliance

Pursuant to G. L. c. 62C, § 49A and G. L. c. 151A, § 19A(b), the above-named prospective purchaser has complied with:

i. all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support, and

ii. all laws of the Commonwealth of Massachusetts relating to employment-security contributions and payments in lieu of contributions.

3. Good Standing

The above-named prospective purchaser (i) has filed with the Secretary of the Commonwealth for the Commonwealth of Massachusetts all registrations, certificates and annual reports required by law, and (ii) if the prospective purchaser is a corporation or limited liability company, such entity is in good standing and qualified to do business in the Commonwealth of Massachusetts.

4. Debarment and Other Ineligibility

The above-named prospective purchaser certifies that it is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from providing goods and/or services to the Commonwealth of Massachusetts or the United States of America pursuant to any applicable debarment or suspension provision of federal or state law or any rules or regulations promulgated thereunder.

5. Northern Ireland Transactions

Pursuant to G. L. c. 7, §§ 22C-F, the above-named prospective purchaser certifies that (***check applicable statements***):

I. _____ The prospective purchaser does not employ ten or more employees in an office or other facility in Northern Ireland.

II. _____ The prospective purchaser employs ten or more employees in an office or other facility located in Northern Ireland and further certifies that:

a. _____ The prospective purchaser does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief, and

b. _____ The prospective purchaser promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and

c. _____ The prospective purchaser is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.

III. _____ The prospective purchaser does not certify to the statements set forth in Item I or Item II(a-c) above.

6. Dependent Care Assistance

The above-named prospective purchaser hereby certifies that, if selected as the successful bidder for the sale transaction described in that certain Notice of Proposal and Request for Response issued by the Massachusetts Bay Transportation Authority on September 3, 2014, relating to certain parcels of land off of Lower Broadway, Everett, Massachusetts, Purchaser shall comply, to the extent required by law, with Section 7 of Chapter 521 of the Acts of 1990, as amended by Chapter 329 of the Acts of 1991, and the regulations issued pursuant thereto, 102 C.M.R. 12.00.

Signed under the penalties of perjury on _____, 2014.

_____
Signature of person whose name and title appear at the top of this form

FORM 4: CONFLICT OF INTEREST CERTIFICATION

The undersigned _____, _____
(Name) (Title)

of _____ ("Purchaser"), hereby certifies

that:

1. Purchaser shall comply with Massachusetts Conflict of Interest Laws, G.L. c. 268A;

2. Purchaser has no real or perceived conflict of interest in relation to the transactions contemplated by that certain Notice of Proposal and Request for Response dated September 3, 2014, issued by the Massachusetts Bay Transportation Authority and relating to certain land located off Lower Broadway, Everett, Massachusetts (collectively, the "Transaction"); and

3. Purchaser shall take any action and supply any information necessary or appropriate should a conflict of interest arise in connection with the Transaction.

_____
Signature of person whose name and title appear at the top of this form

_____
Date

RESORTS DEVELOPMENT

August 26, 2014

Jeffrey A. Simon
Massachusetts Department of Transportation
10 Park Plaza
Boston, MA 02116

Re: Land in Everett

Dear Mr. Simon:

Wynn MA, LLC ("Buyer") hereby submits the following offer to acquire certain property of the Massachusetts Bay Transportation Authority ("MBTA") in Everett, Massachusetts defined below.

Property: The subject property consists of three (3) parcels of land currently owned by the MBTA as part of or adjacent to the Everett Shops on Lower Broadway in Everett, Massachusetts, which are shown on the plan attached hereto as Exhibit A and more particularly described as follows:

Proposed Parcel One: A triangular parcel located in the south east corner of the MBTA parcel containing approximately 0.52 acres of land and containing the current main entrance of MBTA parcel.

Proposed Parcel Two: A rectangular parcel running along the north east edge of the MBTA parcel containing approximately 0.54 acres measuring approximately 50' by 440'.

Proposed Parcel Three: A rectangular parcel running along the north west edge of the MBTA parcel containing land approximately 0.964 acres measuring approximately 60'by 630'.

The exact location and dimensions of the foregoing parcels are subject to mutual agreement and shall be confirmed by survey and creation of final legal descriptions.

The transfer of these parcels will facilitate the relocation of the main entrance to the MBTA Everett Shops site from Horizon Way to a new location off Lower Broadway which provides substantially equivalent operational access for the MBTA. The new access would be from a new public street that would connect to a new, improved, signalized intersection at Lower Broadway. An

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example of such operationally equivalent substitute access is shown on Exhibit A, highlighted in yellow. Parcel One would be conveyed subject to the MBTA's reservation of an easement providing access to the Everett Shops property from Horizon Way consistent with the MBTA's current use, provided that, upon Buyer providing the substantially equivalent substitute access, the MBTA would release such easement and all rights in and to Horizon Way.

Purchase Price: Cash consideration of Six Million Dollars ($6,000,000.00).

As part of the relocation of the existing main entrance of the MBTA Everett Shops site to a new, substitute access drive as provided above, Buyer shall (i) construct an improved access drive from Lower Broadway to the MBTA site, which shall meet the standard for public ways in Everett, MA, and (ii) provide signalization and related improvements to the connecting intersection at Lower Broadway in accordance with applicable City of Everett requirements.

Deposit: Twenty-Five Percent (25%) of the cash consideration or One Million Five Hundred Thousand Dollars ($1,500,000.00) (the "Deposit"), which has been paid by Buyer with the submission of this proposal and shall be non-refundable, except if Buyer is the successful bidder for the Property and the MBTA fails or refuses to proceed with the sale of the Property to Buyer in accordance with this offer. The Deposit shall be liquidated damages and the MBTA's sole remedy in the event Buyer fails to complete the purchase of the Property in accordance with this offer.

Closing: The Closing shall take place at the MBTA's offices at 10 Park Plaza, Boston, Massachusetts, at 11:00 a.m. on a date designated by Buyer within one hundred eighty (180) days of the conclusion of the bid process and the MBTA's confirmation of its acceptance of Buyer's offer. Buyer shall designate a date for closing by providing at least fifteen (15) days' prior written notice. Buyer shall have the right to postpone the Closing by up to one hundred eighty (180) days upon written notice to the MBTA, which written notice must be received by the MBTA prior to the expiration of the initial one hundred eighty day (180) day period.

RESORTS DEVELOPMENT

Use: The Property shall be used (i) to facilitate the relocation of the main entrance to the MBTA Everett Shops site from Horizon Way to a new location off Lower Broadway as provided herein, and (ii) in a manner that is (a) consistent with the City of Everett Lower Broadway Master Plan and applicable zoning regulations and approved by the City of Everett, and (b) not inconsistent with and will not materially interfere with use and operation of the Everett Shops property by the MBTA.

Condition Of Property; Title: The Property will be delivered at Closing in as-is condition, free of all tenants and occupants and any personal property, equipment, trash or debris. The Property will be conveyed to Buyer or its nominee by a Massachusetts quitclaim deed, free of all mortgages or other monetary liens or any encumbrances or encroachments which would prohibit, limit or adversely affect the use of the Property for its intended purposes.

Advertising; Bid Process: Buyer acknowledges that this Offer is subject to the advertisement and bid requirements of M.G.L. c. 161, Sec. 5(b). Upon acceptance of this Offer, the MBTA agrees to promptly proceed to satisfy such requirements as soon as reasonably practicable. If no competing bids are received or no bids equal or exceed Buyer's bid, the MBTA shall promptly notify Buyer and confirm the MBTA's unconditional acceptance of Buyer's offer in writing. In the event the MBTA receives any bid equal to or in excess of Buyer's offer, the MBTA shall notify Buyer and proceed to a last and final round of bidding which shall include Buyer. In the event the MBTA ultimately receives and accepts a bid with value in excess of Buyer's bid, the MBTA shall notify Buyer thereof in writing and promptly return the Deposit to Buyer.

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RESORTS DEVELOPMENT

The terms of this offer will expire at 5:00 p.m. (EDT) on August 26, 2014, unless accepted by the MBTA. If the general terms of this letter are acceptable, please sign two copies of this letter in the space below, keep one for your files, and return one to me.

Sincerely,

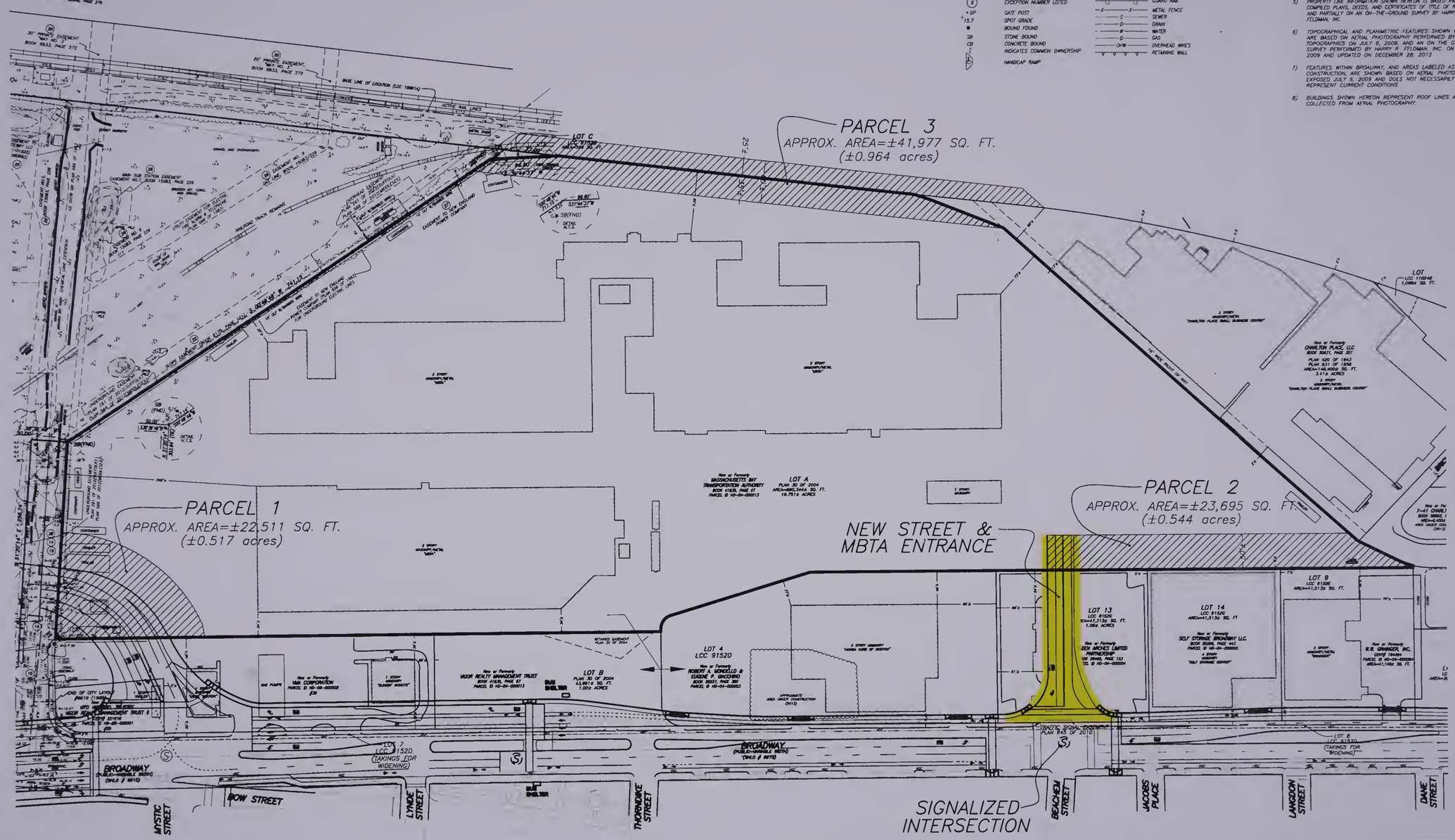
Bob DeSalvio

Bob DeSalvio
Senior Vice President

Agreed to and accepted this 26th day of August, 2014.

Massachusetts Bay Transportation Authority

Name: Richard A. Davey
Title: Secretary & CEO



LEGEND

	SEWER MANHOLE	TBM	TEMPORARY BENCH MARK
	DRAIN MANHOLE	FND	FOUND
	ELECTRIC MANHOLE	±	MORE OR LESS
	TELEPHONE MANHOLE	#	MASSACHUSETTS WATER RESOURCES AUTHORITY
	CABLE TV MANHOLE	DH	DRILL HOLE
	HYDRANT	VGC	VERTICAL GRANITE CURB
	WATER SHUT OFF	CLF	CHAIN LINK FENCE
	GAS SHUT OFF	BIT	BITUMINOUS
	CATCH BASIN	CONC	CONCRETE
	GUY WIRE	TC	TOP OF CURB
	UTILITY POLE	BC	BOTTOM OF CURB
	LIGHT POLE	R=	RIM ELEVATION
	ELECTRIC HANDHOLE	I=	INVERT ELEVATION
	SIGN	NVP	NO VISIBLE PIPES
FA	FIRE ALARM	ECB	EVERETT CITY BASE
	OBSERVATION WELL		RAILROAD TRACKS
X	EXCEPTION NUMBER LISTED		GUARD RAIL
GP	GATE POST	X X	METAL FENCE
15.7	SPOT GRADE	S	SEWER
	BOUND FOUND	D	DRAIN
SB	STONE BOUND	W	WATER
CB	CONCRETE BOUND	G	GAS
	INDICATES COMMON OWNERSHIP	OHW	OVERHEAD WIRES
			RETAINING WALL
	HANDICAP RAMP		

NOTES:

1) ELEVATIONS ESTABLISHED BY GPS.

2) ELEVATIONS REFER TO EVERETT CITY BASE.

3) CONTOUR INTERVAL EQUALS ONE (1) FOOT.

4) UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUB-SURFACE UTILITIES CANNOT BE VISUBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUB-SURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION.

5) PROPERTY LINE INFORMATION SHOWN HEREON IS BASED PARTIALLY ON COMPILED PLANS, DEEDS, AND CERTIFICATES OF TITLE OF RECORD, AND PARTIALLY ON AN ON-THE-GROUND SURVEY BY HARRY R. FELDMAN, INC.

6) TOPOGRAPHICAL AND PLANIMETRIC FEATURES SHOWN HEREON ARE BASED ON AERIAL PHOTOGRAPHY PERFORMED BY EASTERN TOPOGRAPHICS ON JULY 8, 2009, AND AN ON THE GROUND SURVEY PERFORMED BY HARRY R. FELDMAN, INC. ON JULY 19, 2009 AND UPDATED ON DECEMBER 28, 2013

7) FEATURES WITHIN BROADWAY, AND AREAS LABELED AS UNDER CONSTRUCTION, ARE SHOWN BASED ON AERIAL PHOTOGRAPHY EXPOSED JULY 6, 2009 AND DOES NOT NECESSARILY REPRESENT CURRENT CONDITIONS.

8) BUILDINGS SHOWN HEREON REPRESENT ROOF LINES AS COLLECTED FROM AERIAL PHOTOGRAPHY.

PROPOSAL OF LAND ACQUISITIONS

MAY 20, 2014

NOTES:

1) EXHIBIT BACKGROUND IS BASED ON SITE SURVEY DATED 03/11/2013 PREPARED BY FELDMAN LAND SURVEYORS.
2) DIMENSIONS & AREAS ARE APPROXIMATE AND FOR GENERAL PURPOSES ONLY.

GRAPHIC SCALE

50 0 25 50 100 150

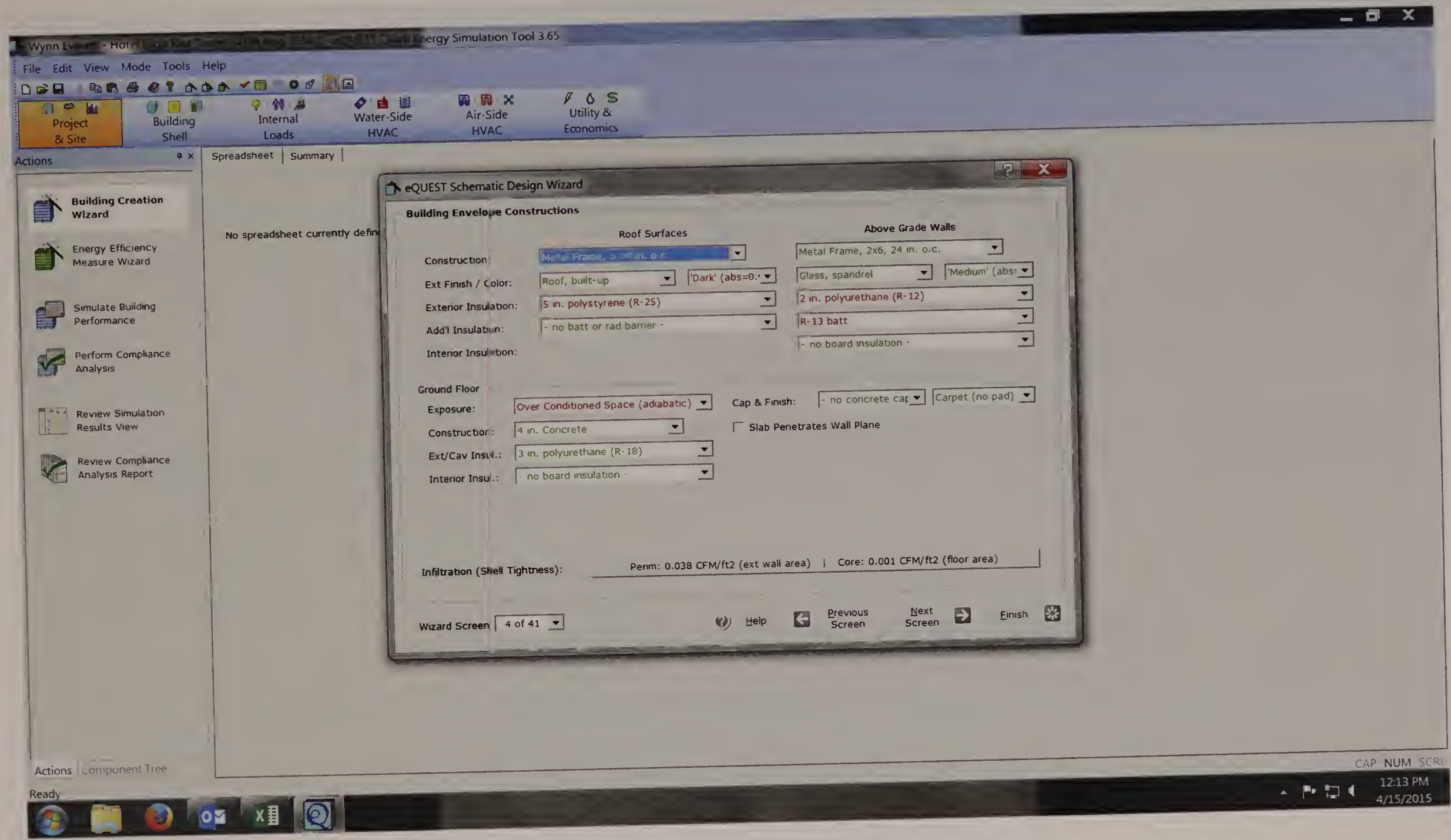
GRAPHIC PROVIDED BY AECOM

AECOM TECHNICAL SERVICES, INC.
86 LONG WHARF
BOSTON, MA 02110
617.723.1700 tel 617.723.6558 fax
www.aecom.com

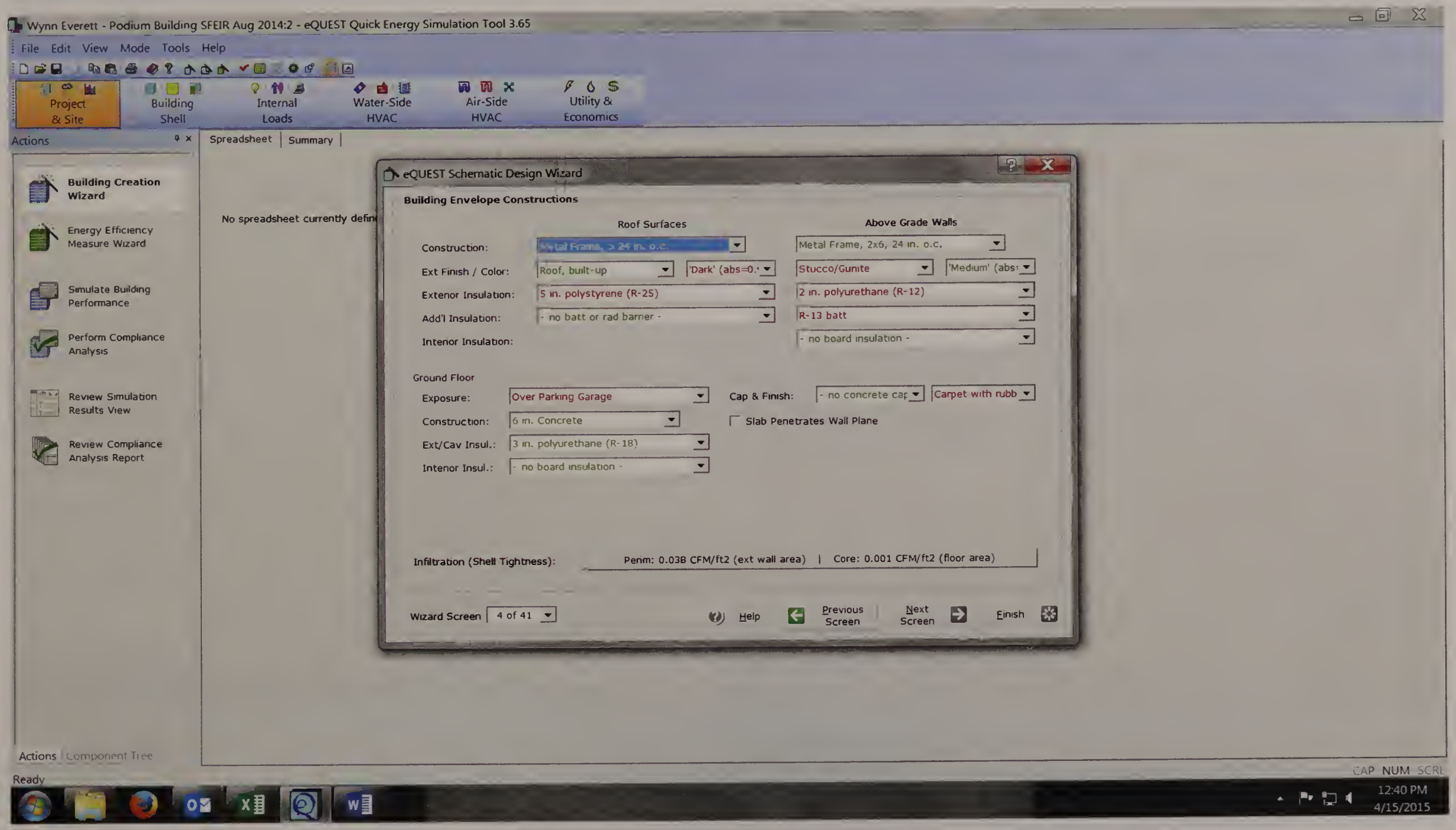
Appendix C

eQuest Model Inputs

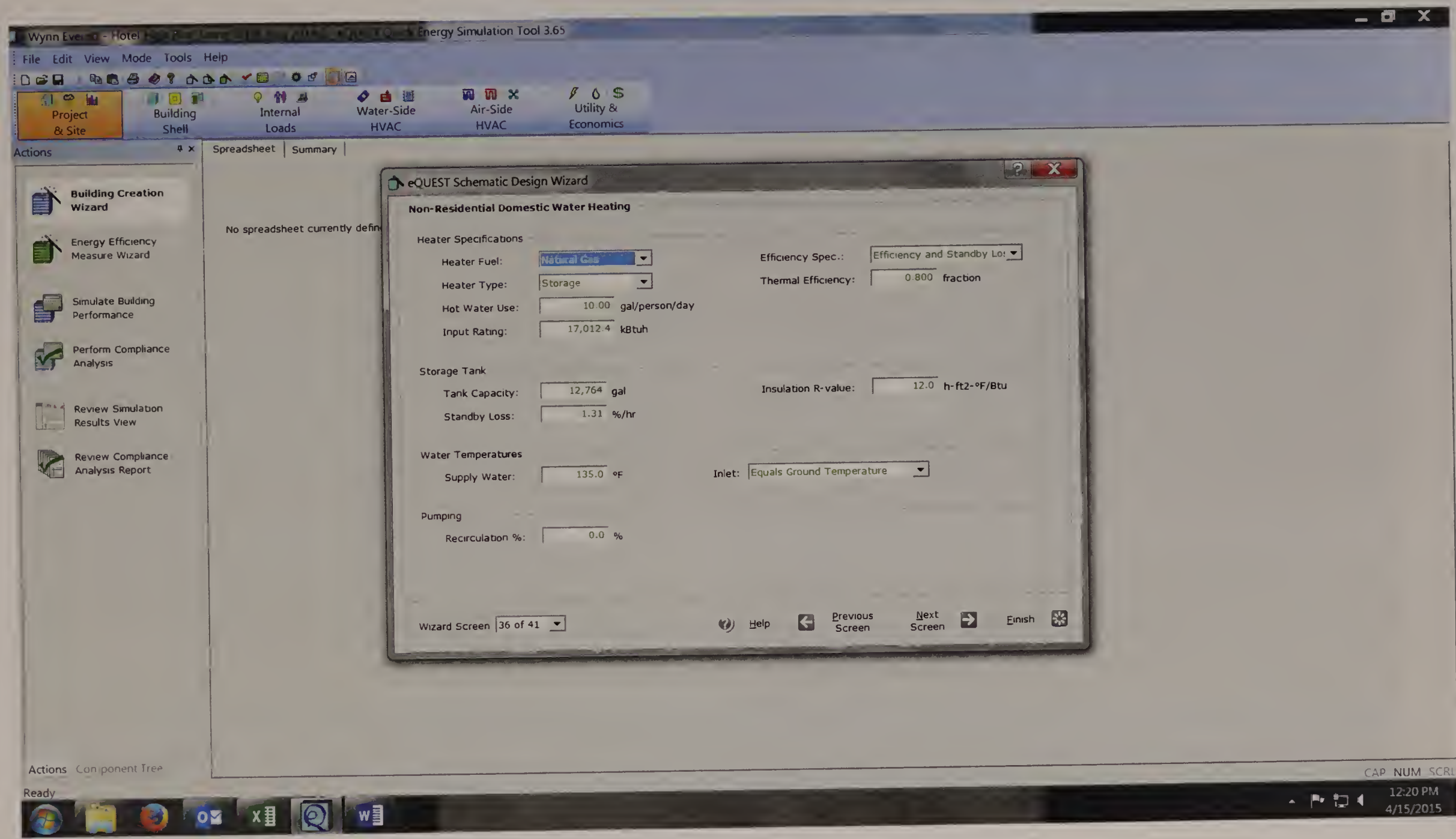
Screen 1: SFEIR eQUEST Run for Hotel Tower used R-25 (not R-30) roof insulation for the Base Case and Mitigation Case.



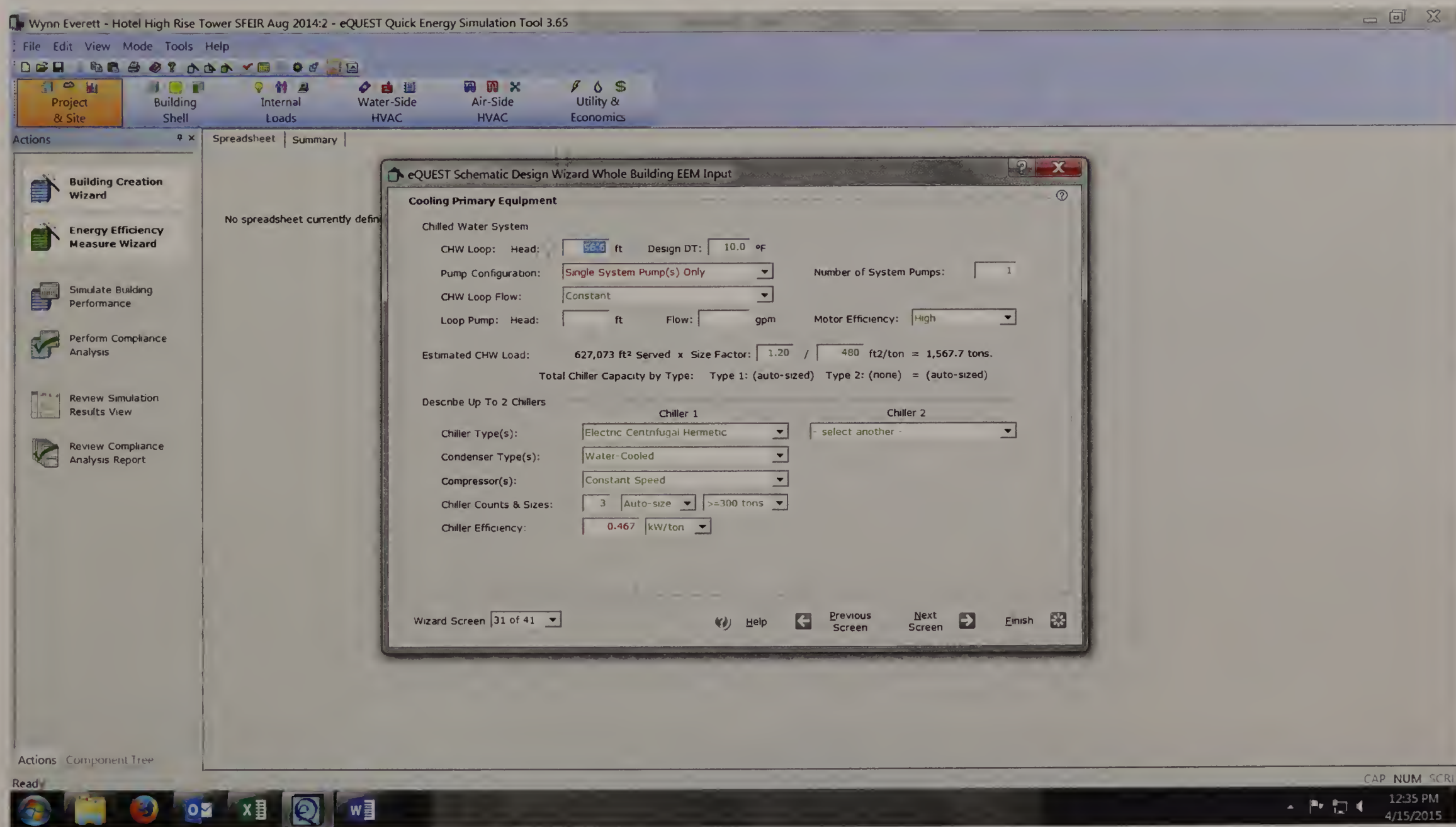
Screen 2: SFEIR eQUEST Run for Podium Building used R-25 (not R-30) roof insulation for the Base Case and Mitigation Case.



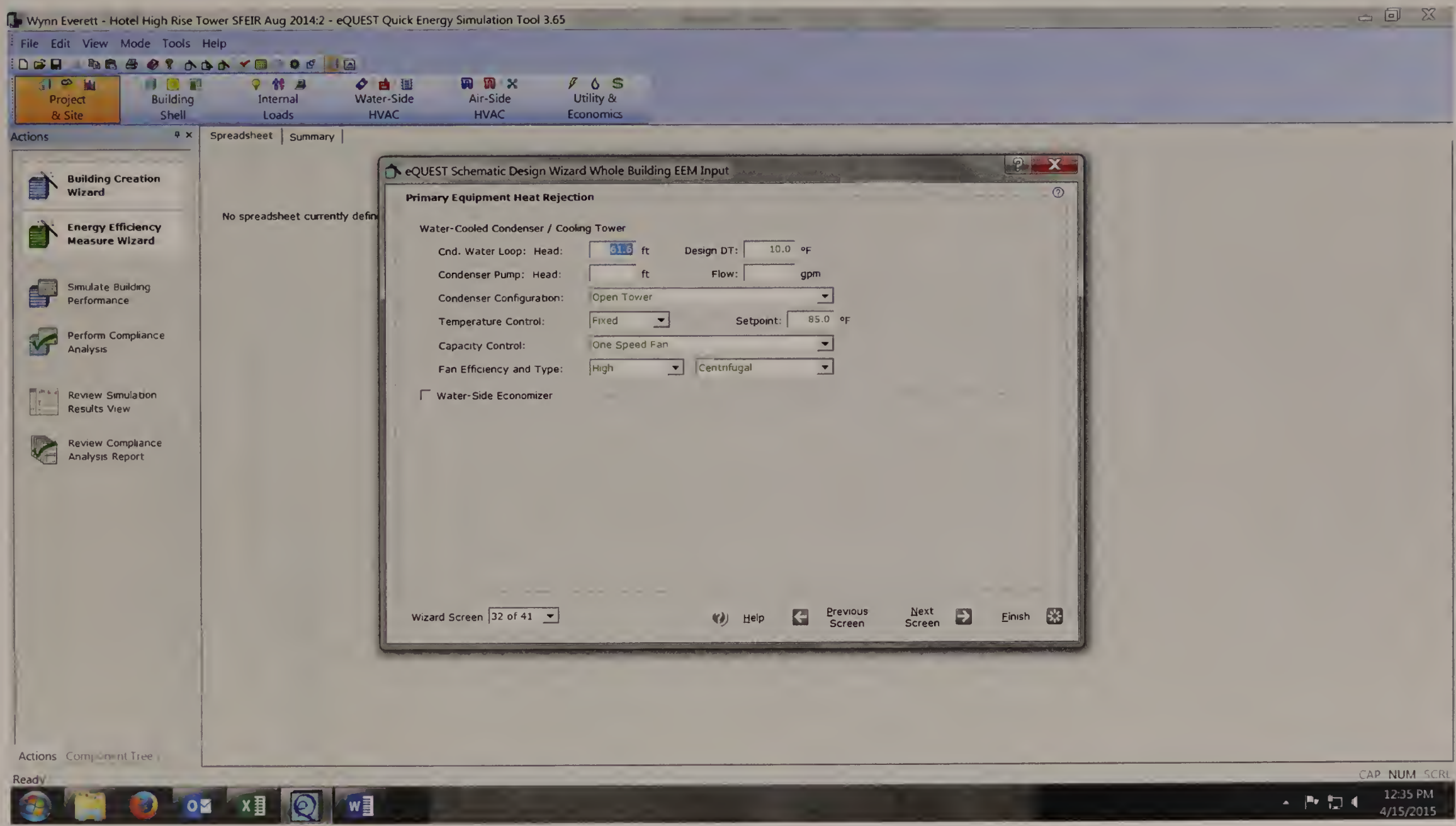
Screen 3: SFEIR eQUEST Run for Hotel Tower used eQUEST default thermal efficiency of 80% (not 70%) for hot water heating.



Screen 4: SFEIR eQUEST Run for Hotel Tower used constant (not variable) speed compressors.



Screen 5: SFEIR eQUEST Run for Hotel Tower used constant, one-speed (not variable) speed cooling tower fans.



Appendix D

Sullivan Square

Appendix D

Sullivan Square

D1. Synchro Output
   a. Existing (2014) Conditions
   b. No Build (2023) Conditions
   c. Build (2023) Conditions
   d. Build (2023) Mitigated Conditions

D2. Reassignment of Traffic Volumes

D3. VISSIM Analysis

D4. 2013 Existing Conditions Synchro Output and CASTs

D5. HCS Merge Analysis

D6. Comparison Between Existing Conditions Analysis, (2008, 2013, 2014)

Synchro Output

Existing (2014) Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	480	0	0	594	225	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3139			3312	1671	1417
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3139			3312	1671	1417
Peak-hour factor, PHF	0.85	0.85	0.93	0.93	0.77	0.77
Adj. Flow (vph)	565	0	0	639	292	410
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	565	0	0	639	292	410
Heavy Vehicles (%)	15%	0%	0%	9%	8%	14%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.2			55.2	30.9	30.9
Effective Green, g (s)	55.2			55.2	30.9	30.9
Actuated g/C Ratio	0.57			0.57	0.32	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1803			1902	537	455
v/s Ratio Prot	0.18			c0.19	0.17	c0.29
v/s Ratio Perm						
v/c Ratio	0.31			0.34	0.54	0.90
Uniform Delay, d1	10.6			10.8	26.8	31.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.5	1.1	20.7
Delay (s)	11.1			11.3	27.9	51.8
Level of Service	B			B	C	D
Approach Delay (s)	11.1			11.3	41.9	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	96.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1533	130	0	0	0	0	0	736	283	501	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1455						2538	3213	3282	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1455						2538	3213	3282	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1614	137	0	0	0	0	0	836	322	569	0
RTOR Reduction (vph)	0	0	63	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1614	74	0	0	0	0	0	836	322	569	0
Heavy Vehicles (%)	0%	5%	11%	2%	2%	2%	0%	0%	12%	9%	10%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		38.0	38.0						49.7	15.3	71.0	
Effective Green, g (s)		38.0	38.0						49.7	15.3	71.0	
Actuated g/C Ratio		0.32	0.32						0.41	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1564	460						1051	409	1941	
v/s Ratio Prot		c0.33							c0.33	c0.10	0.17	
v/s Ratio Perm			0.05									
v/c Ratio		1.03	0.16						0.80	0.79	0.29	
Uniform Delay, d1		41.0	29.5						30.7	50.8	12.1	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		31.4	0.2						6.2	9.6	0.4	
Delay (s)		72.4	29.7						36.9	60.4	12.5	
Level of Service		E	C						D	E	B	
Approach Delay (s)		69.1			0.0			36.9			29.8	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	725	48	10	591	30	3	4	10	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.95	0.95	0.95	0.53	0.53	0.53	0.25	0.25	0.25
Hourly flow rate (vph)	28	884	59	11	622	32	6	8	19	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.92			0.92			0.95	0.95	0.92	0.95	0.95	0.92
vC, conflicting volume	654			943			1302	1644	471	1180	1658	327
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	462			754			862	1222	239	735	1236	108
tC, single (s)	5.4			4.5			8.2	7.0	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.9			2.4			3.8	4.2	3.3	3.5	4.0	3.3
p0 queue free %	96			98			97	94	97	98	100	100
cM capacity (veh/h)	690			681			186	134	704	265	160	861

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	470	501	322	343	32	4
Volume Left	28	0	11	0	6	4
Volume Right	0	59	0	32	19	0
cSH	690	1700	681	1700	282	265
Volume to Capacity	0.04	0.29	0.02	0.20	0.11	0.02
Queue Length 95th (ft)	3	0	1	0	10	1
Control Delay (s)	1.2	0.0	0.5	0.0	19.4	18.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.6		0.3		19.4	18.8
Approach LOS					C	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	251	201	221	211	275	363
Average Queue (ft)	108	51	96	95	113	169
95th Queue (ft)	198	135	188	185	208	291
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0	0	
Queuing Penalty (veh)			1	1	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	525	512	500	250	242	255	273	245	229	178
Average Queue (ft)	483	421	327	113	179	177	162	121	130	75
95th Queue (ft)	541	524	477	282	255	253	240	223	202	159
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	18	6	4		7	6				
Queuing Penalty (veh)	0	0	0		25	21				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			21	0						
Queuing Penalty (veh)			27	0						

Intersection: 58: Spice Street/MBTA Drive & Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	166	149	83	36	53	8
Average Queue (ft)	37	18	11	1	15	0
95th Queue (ft)	118	85	50	19	44	4
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 75

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	651	0	0	552	316	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3438	1787	1495
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3438	1787	1495
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.93	0.93
Adj. Flow (vph)	794	0	0	642	340	341
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	794	0	0	642	340	341
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.3			55.3	25.5	25.5
Effective Green, g (s)	55.3			55.3	25.5	25.5
Actuated g/C Ratio	0.61			0.61	0.28	0.28
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2113			2093	501	419
v/s Ratio Prot	c0.23			0.19	0.19	c0.23
v/s Ratio Perm						
v/c Ratio	0.38			0.31	0.68	0.81
Uniform Delay, d1	9.0			8.5	29.0	30.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.4	3.6	11.5
Delay (s)	9.5			8.9	32.7	41.9
Level of Service	A			A	C	D
Approach Delay (s)	9.5			8.9	37.3	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1170	160	0	0	0	0	0	993	183	436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1495						2733	3019	3223	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1495						2733	3019	3223	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84
Adj. Flow (vph)	0	1360	186	0	0	0	0	0	1128	218	519	0
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	40	66	0	0
Lane Group Flow (vph)	0	1360	84	0	0	0	0	0	1088	152	519	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		37.2	37.2						53.6	11.4	71.0	
Effective Green, g (s)		37.2	37.2						53.6	11.4	71.0	
Actuated g/C Ratio		0.31	0.31						0.45	0.10	0.60	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1541	466						1228	288	1919	
v/s Ratio Prot		c0.28							c0.40	c0.05	0.16	
v/s Ratio Perm			0.06									
v/c Ratio		0.88	0.18						0.89	0.53	0.27	
Uniform Delay, d1		38.9	29.9						30.0	51.3	11.6	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		6.3	0.2						9.6	1.7	0.3	
Delay (s)		45.3	30.1						39.6	53.1	12.0	
Level of Service		D	C						D	D	B	
Approach Delay (s)		43.4			0.0			39.6			24.1	
Approach LOS		D			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	903	47	16	539	41	10	2	89	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.82	0.82	0.82	0.50	0.50	0.50
Hourly flow rate (vph)	21	1062	55	18	606	46	12	2	109	2	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.94			0.89			0.92	0.92	0.89	0.92	0.92	0.94
vC, conflicting volume	652			1118			1477	1820	559	1348	1825	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493			876			1031	1404	245	890	1409	145
tC, single (s)	5.3			4.5			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			91	98	84	99	100	99
cM capacity (veh/h)	710			592			143	122	675	174	121	826

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	552	586	321	349	123	8
Volume Left	21	0	18	0	12	2
Volume Right	0	55	0	46	109	6
cSH	710	1700	592	1700	463	427
Volume to Capacity	0.03	0.34	0.03	0.21	0.27	0.02
Queue Length 95th (ft)	2	0	2	0	27	1
Control Delay (s)	0.8	0.0	1.0	0.0	15.6	13.6
Lane LOS	A		A		C	B
Approach Delay (s)	0.4		0.5		15.6	13.6
Approach LOS					C	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	208	183	194	191	327	317
Average Queue (ft)	127	80	81	82	156	156
95th Queue (ft)	190	161	160	154	266	266
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	492	419	323	127	244	252	199	179	198	178
Average Queue (ft)	357	300	184	46	208	210	115	48	106	48
95th Queue (ft)	467	395	289	88	258	256	186	142	175	129
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	1	0			13	13				
Queuing Penalty (veh)	0	0			63	67				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			1							
Queuing Penalty (veh)			2							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	177	180	86	46	104	14
Average Queue (ft)	50	37	11	2	46	2
95th Queue (ft)	140	128	45	20	85	9
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	2	1				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 133

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	472	0	0	486	263	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3505			3539	1770	1538
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3505			3539	1770	1538
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.91	0.91
Adj. Flow (vph)	508	0	0	512	289	487
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	508	0	0	512	289	487
Heavy Vehicles (%)	3%	0%	0%	2%	2%	5%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.1			55.1	33.3	33.3
Effective Green, g (s)	55.1			55.1	33.3	33.3
Actuated g/C Ratio	0.56			0.56	0.34	0.34
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1962			1981	598	520
v/s Ratio Prot	c0.14			0.14	0.16	c0.32
v/s Ratio Perm						
v/c Ratio	0.26			0.26	0.48	0.94
Uniform Delay, d1	11.1			11.1	25.7	31.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.6	24.4
Delay (s)	11.5			11.5	26.4	56.0
Level of Service	B			B	C	E
Approach Delay (s)	11.5			11.5	44.9	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1018	146	0	0	0	0	0	882	203	348	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5036	1524						2733	3367	3471	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5036	1524						2733	3367	3471	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	0	1119	160	0	0	0	0	0	969	231	395	0
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	39	66	0	0
Lane Group Flow (vph)	0	1119	50	0	0	0	0	0	930	165	395	0
Heavy Vehicles (%)	0%	3%	6%	2%	2%	2%	0%	0%	4%	4%	4%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		32.7	32.7						54.1	11.0	71.1	
Effective Green, g (s)		32.7	32.7						54.1	11.0	71.1	
Actuated g/C Ratio		0.28	0.28						0.47	0.10	0.62	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1434	434						1287	322	2149	
v/s Ratio Prot		c0.22							c0.34	c0.05	0.11	
v/s Ratio Perm			0.03									
v/c Ratio		0.78	0.11						0.72	0.51	0.18	
Uniform Delay, d1		37.7	30.4						24.3	49.3	9.4	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		2.8	0.1						3.5	1.4	0.2	
Delay (s)		40.6	30.5						27.9	50.7	9.6	
Level of Service		D	C						C	D	A	
Approach Delay (s)		39.3			0.0			27.9			24.8	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	862	29	1	482	11	4	0	19	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.95	0.95	0.95	0.70	0.70	0.70	0.25	0.25	0.25
Hourly flow rate (vph)	24	871	29	1	507	12	6	0	27	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.97			0.94			0.95	0.95	0.94	0.95	0.95	0.97
vC, conflicting volume	519			900			1190	1455	450	1026	1464	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431			755			938	1217	274	767	1226	163
tC, single (s)	5.2			4.1			8.0	6.5	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.2			3.8	4.0	3.4	3.5	4.0	3.3
p0 queue free %	97			100			97	100	96	98	100	100
cM capacity (veh/h)	792			809			174	168	655	263	166	830

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	460	465	255	265	33	4
Volume Left	24	0	1	0	6	4
Volume Right	0	29	0	12	27	0
cSH	792	1700	809	1700	442	263
Volume to Capacity	0.03	0.27	0.00	0.16	0.07	0.02
Queue Length 95th (ft)	2	0	0	0	6	1
Control Delay (s)	0.9	0.0	0.1	0.0	13.8	18.9
Lane LOS	A		A		B	C
Approach Delay (s)	0.4		0.0		13.8	18.9
Approach LOS					B	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	194	174	170	165	255	467
Average Queue (ft)	105	46	82	79	128	247
95th Queue (ft)	172	114	153	138	223	400
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	427	375	249	82	233	242	209	181	168	143
Average Queue (ft)	298	252	138	39	182	185	114	57	80	26
95th Queue (ft)	397	346	242	69	250	256	190	157	146	92
Link Distance (ft)	481	481	481		201	201	422	422	422	422
Upstream Blk Time (%)	0				7	8				
Queuing Penalty (veh)	0				29	34				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)				0						
Queuing Penalty (veh)				0						

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	133	103	18	5	70	6
Average Queue (ft)	34	16	1	0	22	0
95th Queue (ft)	99	64	18	4	56	4
Link Distance (ft)	218	218	201	201	164	182
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 64

No Build (2023) Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	574	0	0	643	236	508
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3139			3312	1671	1417
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3139			3312	1671	1417
Peak-hour factor, PHF	0.85	0.85	0.93	0.93	0.77	0.77
Adj. Flow (vph)	675	0	0	691	306	660
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	675	0	0	691	306	660
Heavy Vehicles (%)	15%	0%	0%	9%	8%	14%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1726			1821	584	495
v/s Ratio Prot	c0.22			0.21	0.18	c0.47
v/s Ratio Perm						
v/c Ratio	0.39			0.38	0.52	1.33
Uniform Delay, d1	12.9			12.8	25.9	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7			0.6	0.9	163.4
Delay (s)	13.6			13.4	26.7	195.9
Level of Service	B			B	C	F
Approach Delay (s)	13.6			13.4	142.3	
Approach LOS	B			B	F	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1806	136	0	0	0	0	0	834	504	545	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1455						2538	3213	3282	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1455						2538	3213	3282	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1901	143	0	0	0	0	0	948	573	619	0
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1901	87	0	0	0	0	0	948	573	619	0
Heavy Vehicles (%)	0%	5%	11%	2%	2%	2%	0%	0%	12%	9%	10%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		38.0	38.0						49.0	16.0	71.0	
Effective Green, g (s)		38.0	38.0						49.0	16.0	71.0	
Actuated g/C Ratio		0.32	0.32						0.41	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1564	460						1036	428	1941	
v/s Ratio Prot		c0.38							c0.37	c0.18	0.19	
v/s Ratio Perm			0.06									
v/c Ratio		1.22	0.19						0.92	1.34	0.32	
Uniform Delay, d1		41.0	29.8						33.5	52.0	12.3	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		103.1	0.2						13.8	167.6	0.4	
Delay (s)		144.1	30.0						47.3	219.6	12.8	
Level of Service		F	C						D	F	B	
Approach Delay (s)		136.1			0.0			47.3			112.2	
Approach LOS		F			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	109.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	779	225	10	640	31	3	4	44	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.95	0.95	0.95	0.53	0.53	0.53	0.25	0.25	0.25
Hourly flow rate (vph)	29	950	274	11	674	33	6	8	83	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.91			0.89			0.93	0.93	0.89	0.93	0.93	0.91
vC, conflicting volume	706			1224			1504	1873	612	1331	1994	353
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	492			1002			981	1378	313	796	1508	106
tC, single (s)	5.4			4.5			8.2	7.0	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.9			2.4			3.8	4.2	3.3	3.5	4.0	3.3
p0 queue free %	96			98			96	93	86	98	100	100
cM capacity (veh/h)	659			522			145	103	612	203	106	854

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	504	749	347	369	96	4
Volume Left	29	0	11	0	6	4
Volume Right	0	274	0	33	83	0
cSH	659	1700	522	1700	388	203
Volume to Capacity	0.04	0.44	0.02	0.22	0.25	0.02
Queue Length 95th (ft)	3	0	2	0	24	2
Control Delay (s)	1.2	0.0	0.7	0.0	17.3	23.1
Lane LOS	A		A		C	C
Approach Delay (s)	0.5		0.3		17.3	23.1
Approach LOS					C	C

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	226	193	232	234	541	546
Average Queue (ft)	129	92	117	117	411	479
95th Queue (ft)	207	175	236	233	700	623
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			1	1	34	62
Queuing Penalty (veh)			4	4	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	539	537	541	250	244	265	462	454	414	372
Average Queue (ft)	503	504	507	176	201	194	388	368	278	76
95th Queue (ft)	523	525	529	341	255	257	525	532	541	264
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	67	65	68		11	8	47	42	18	0
Queuing Penalty (veh)	0	0	0		46	34	0	0	0	0
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			66	0						
Queuing Penalty (veh)			90	1						

Intersection: 58: Spice Street/MBTA Drive & Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	166	201	172	126	62	10
Average Queue (ft)	47	35	20	13	28	0
95th Queue (ft)	131	125	89	67	57	4
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	0	0	0			
Queuing Penalty (veh)	0	1	0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 180

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	711	0	0	637	331	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3438	1787	1495
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3438	1787	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.93	0.93
Adj. Flow (vph)	773	0	0	692	356	408
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	773	0	0	692	356	408
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.2			55.2	29.8	29.8
Effective Green, g (s)	55.2			55.2	29.8	29.8
Actuated g/C Ratio	0.58			0.58	0.31	0.31
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2016			1997	560	468
v/s Ratio Prot	c0.22			0.20	0.20	c0.27
v/s Ratio Perm						
v/c Ratio	0.38			0.35	0.64	0.87
Uniform Delay, d1	10.7			10.4	27.9	30.8
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.6			0.5	2.4	16.2
Delay (s)	11.3			10.9	30.3	47.0
Level of Service	B			B	C	D
Approach Delay (s)	11.3			10.9	39.2	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1279	168	0	0	0	0	0	1303	339	518	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1495						2733	3019	3223	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1495						2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1390	183	0	0	0	0	0	1416	368	563	0
RTOR Reduction (vph)	0	0	98	0	0	0	0	0	42	64	0	0
Lane Group Flow (vph)	0	1390	85	0	0	0	0	0	1374	304	563	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		37.4	37.4						49.9	15.1	71.0	
Effective Green, g (s)		37.4	37.4						49.9	15.1	71.0	
Actuated g/C Ratio		0.31	0.31						0.42	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1547	468						1142	381	1916	
v/s Ratio Prot		c0.28							c0.50	c0.10	0.17	
v/s Ratio Perm			0.06									
v/c Ratio		0.90	0.18						1.20	0.80	0.29	
Uniform Delay, d1		39.2	29.9						34.8	50.7	11.9	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		7.3	0.2						99.8	11.1	0.4	
Delay (s)		46.5	30.1						134.5	61.8	12.3	
Level of Service		D	C						F	E	B	
Approach Delay (s)		44.6			0.0			134.5			31.8	
Approach LOS		D			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	74.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	119.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	94.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	1038	49	17	623	43	10	2	261	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1128	53	18	677	47	11	2	284	1	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.92			0.88			0.92	0.92	0.88	0.92	0.92	0.92
vC, conflicting volume	724			1182			1575	1957	591	1628	1960	362
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	538			938			1081	1496	269	1138	1500	146
tC, single (s)	5.3			4.5			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			92	98	56	99	100	100
cM capacity (veh/h)	667			555			131	107	649	77	106	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	585	617	357	385	297	4
Volume Left	21	0	18	0	11	1
Volume Right	0	53	0	47	284	3
cSH	667	1700	555	1700	549	240
Volume to Capacity	0.03	0.36	0.03	0.23	0.54	0.02
Queue Length 95th (ft)	2	0	3	0	80	1
Control Delay (s)	0.8	0.0	1.1	0.0	19.0	20.3
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.5		19.0	20.3
Approach LOS					C	C

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	284	245	221	197	418	450
Average Queue (ft)	156	102	105	97	177	247
95th Queue (ft)	251	208	192	174	360	459
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0	2	5
Queuing Penalty (veh)			1	1	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	501	468	348	225	252	257	338	293	233	192
Average Queue (ft)	380	322	205	54	227	232	202	159	125	69
95th Queue (ft)	496	426	300	128	244	249	302	272	204	156
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	2	0			40	45	0			
Queuing Penalty (veh)	0	0			263	295	0			
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			3	0						
Queuing Penalty (veh)			4	0						

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	247	244	172	123	314	11
Average Queue (ft)	183	184	19	7	291	2
95th Queue (ft)	270	264	90	51	302	9
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	6	6	0		100	
Queuing Penalty (veh)	33	33	0		0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 630

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	509	0	0	527	280	488
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3505			3539	1770	1538
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3505			3539	1770	1538
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.92	0.92
Adj. Flow (vph)	547	0	0	555	304	530
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	547	0	0	555	304	530
Heavy Vehicles (%)	3%	0%	0%	2%	2%	5%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1927			1946	619	538
v/s Ratio Prot	0.16			c0.16	0.17	c0.34
v/s Ratio Perm						
v/c Ratio	0.28			0.29	0.49	0.99
Uniform Delay, d1	12.0			12.0	25.5	32.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.4			0.4	0.6	34.7
Delay (s)	12.4			12.4	26.1	66.9
Level of Service	B			B	C	E
Approach Delay (s)	12.4			12.4	52.1	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1078	153	0	0	0	0	0	1014	291	375	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5036	1524						2733	3367	3471	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5036	1524						2733	3367	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1172	166	0	0	0	0	0	1102	316	408	0
RTOR Reduction (vph)	0	0	108	0	0	0	0	0	40	65	0	0
Lane Group Flow (vph)	0	1172	58	0	0	0	0	0	1062	251	408	0
Heavy Vehicles (%)	0%	3%	6%	2%	2%	2%	0%	0%	4%	4%	4%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		34.1	34.1						51.8	13.3	71.1	
Effective Green, g (s)		34.1	34.1						51.8	13.3	71.1	
Actuated g/C Ratio		0.29	0.29						0.45	0.11	0.61	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1477	447						1218	385	2123	
v/s Ratio Prot		c0.23							c0.39	c0.07	0.12	
v/s Ratio Perm			0.04									
v/c Ratio		0.79	0.13						0.87	0.65	0.19	
Uniform Delay, d1		37.8	30.1						29.2	49.2	9.9	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		3.0	0.1						8.7	3.9	0.2	
Delay (s)		40.8	30.3						37.9	53.2	10.1	
Level of Service		D	C						D	D	B	
Approach Delay (s)		39.5			0.0			37.9			28.9	
Approach LOS		D			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	116.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	941	30	1	523	12	4	0	73	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	951	30	1	551	13	4	0	79	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.96			0.93			0.95	0.95	0.93	0.95	0.95	0.96
vC, conflicting volume	563			981			1294	1581	490	1164	1590	282
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	458			818			1000	1304	288	863	1314	165
tC, single (s)	5.2			4.1			8.0	6.5	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.2			3.8	4.0	3.4	3.5	4.0	3.3
p0 queue free %	97			100			97	100	87	99	100	100
cM capacity (veh/h)	763			758			154	148	634	203	146	822

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	501	506	276	288	84	1
Volume Left	25	0	1	0	4	1
Volume Right	0	30	0	13	79	0
cSH	763	1700	758	1700	546	203
Volume to Capacity	0.03	0.30	0.00	0.17	0.15	0.01
Queue Length 95th (ft)	3	0	0	0	13	0
Control Delay (s)	0.9	0.0	0.1	0.0	12.8	22.8
Lane LOS	A		A		B	C
Approach Delay (s)	0.5		0.0		12.8	22.8
Approach LOS					B	C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	215	179	223	198	460	496
Average Queue (ft)	113	56	87	85	177	314
95th Queue (ft)	188	138	175	167	388	520
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0	2	8
Queuing Penalty (veh)			0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	429	364	241	92	238	248	220	196	180	162
Average Queue (ft)	306	261	145	43	207	211	145	92	87	34
95th Queue (ft)	395	344	248	73	248	257	209	193	151	104
Link Distance (ft)	481	481	481		201	201	422	422	422	422
Upstream Blk Time (%)	0				14	15				
Queuing Penalty (veh)	0				71	76				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			1							
Queuing Penalty (veh)			1							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	175	194	21	10	137	14
Average Queue (ft)	62	47	1	0	54	1
95th Queue (ft)	148	135	11	5	111	6
Link Distance (ft)	218	218	201	201	164	182
Upstream Blk Time (%)	0	0			0	
Queuing Penalty (veh)	0	1			0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 148

Build (2023) Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	581	0	0	649	236	571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3139			3312	1671	1417
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3139			3312	1671	1417
Peak-hour factor, PHF	0.85	0.85	0.93	0.93	0.77	0.77
Adj. Flow (vph)	684	0	0	698	306	742
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	684	0	0	698	306	742
Heavy Vehicles (%)	15%	0%	0%	9%	8%	14%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1726			1821	584	495
v/s Ratio Prot	c0.22			0.21	0.18	c0.52
v/s Ratio Perm						
v/c Ratio	0.40			0.38	0.52	1.50
Uniform Delay, d1	12.9			12.8	25.9	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7			0.6	0.9	235.0
Delay (s)	13.6			13.4	26.7	267.5
Level of Service	B			B	C	F
Approach Delay (s)	13.6			13.4	197.2	
Approach LOS	B			B	F	

Intersection Summary			
HCM 2000 Control Delay	92.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1876	136	0	0	0	0	0	903	504	551	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1455						2538	3213	3282	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1455						2538	3213	3282	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	1975	143	0	0	0	0	0	1026	573	626	0
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1975	87	0	0	0	0	0	1026	573	626	0
Heavy Vehicles (%)	0%	5%	11%	2%	2%	2%	0%	0%	12%	9%	10%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		38.0	38.0						49.0	16.0	71.0	
Effective Green, g (s)		38.0	38.0						49.0	16.0	71.0	
Actuated g/C Ratio		0.32	0.32						0.41	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1564	460						1036	428	1941	
v/s Ratio Prot		c0.40							c0.40	c0.18	0.19	
v/s Ratio Perm			0.06									
v/c Ratio		1.26	0.19						0.99	1.34	0.32	
Uniform Delay, d1		41.0	29.8						35.3	52.0	12.4	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		123.5	0.2						25.7	167.6	0.4	
Delay (s)		164.5	30.0						61.0	219.6	12.8	
Level of Service		F	C						E	F	B	
Approach Delay (s)		155.5			0.0			61.0			111.6	
Approach LOS		F			A			E			F	

Intersection Summary			
HCM 2000 Control Delay	121.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	848	225	10	646	31	3	4	44	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.95	0.95	0.95	0.53	0.53	0.53	0.25	0.25	0.25
Hourly flow rate (vph)	29	1034	274	11	680	33	6	8	83	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.91			0.89			0.93	0.93	0.89	0.93	0.93	0.91
vC, conflicting volume	713			1309			1591	1964	654	1380	2084	356
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	496			1092			1066	1466	354	839	1596	106
tC, single (s)	5.4			4.5			8.2	7.0	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.9			2.4			3.8	4.2	3.3	3.5	4.0	3.3
p0 queue free %	96			98			95	92	86	98	100	100
cM capacity (veh/h)	656			478			124	89	574	185	94	854

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	546	791	351	373	96	4
Volume Left	29	0	11	0	6	4
Volume Right	0	274	0	33	83	0
cSH	656	1700	478	1700	350	185
Volume to Capacity	0.04	0.47	0.02	0.22	0.27	0.02
Queue Length 95th (ft)	3	0	2	0	27	2
Control Delay (s)	1.2	0.0	0.7	0.0	19.1	24.8
Lane LOS	A		A		C	C
Approach Delay (s)	0.5		0.3		19.1	24.8
Approach LOS					C	C

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	739	0	0	664	331	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3438	1787	1495
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3438	1787	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.93	0.93
Adj. Flow (vph)	803	0	0	722	356	686
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	803	0	0	722	356	686
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1909			1890	625	523
v/s Ratio Prot	c0.23			0.21	0.20	c0.46
v/s Ratio Perm						
v/c Ratio	0.42			0.38	0.57	1.31
Uniform Delay, d1	13.2			12.8	26.4	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7			0.6	1.2	153.5
Delay (s)	13.9			13.4	27.6	186.0
Level of Service	B			B	C	F
Approach Delay (s)	13.9			13.4	131.9	
Approach LOS	B			B	F	

Intersection Summary			
HCM 2000 Control Delay	61.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1320	168	0	0	0	0	0	1589	339	545	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1495						2733	3019	3223	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1495						2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1435	183	0	0	0	0	0	1727	368	592	0
RTOR Reduction (vph)	0	0	94	0	0	0	0	0	43	64	0	0
Lane Group Flow (vph)	0	1435	89	0	0	0	0	0	1684	304	592	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		37.8	37.8						49.9	15.1	71.0	
Effective Green, g (s)		37.8	37.8						49.9	15.1	71.0	
Actuated g/C Ratio		0.32	0.32						0.42	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1558	471						1138	380	1910	
v/s Ratio Prot		c0.29							c0.62	c0.10	0.18	
v/s Ratio Perm			0.06									
v/c Ratio		0.92	0.19						1.48	0.80	0.31	
Uniform Delay, d1		39.6	29.8						35.0	50.9	12.2	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		9.3	0.2						220.8	11.5	0.4	
Delay (s)		48.9	30.0						255.8	62.3	12.6	
Level of Service		D	C						F	E	B	
Approach Delay (s)		46.7			0.0			255.8			31.7	
Approach LOS		D			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	127.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	119.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	1324	49	17	650	43	10	2	261	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1439	53	18	707	47	11	2	284	1	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.92			0.87			0.91	0.91	0.87	0.91	0.91	0.92
vC, conflicting volume	753			1492			1901	2297	746	1812	2301	377
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	552			1259			1381	1818	398	1284	1822	142
tC, single (s)	5.3			4.5			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			95			85	97	46	98	100	100
cM capacity (veh/h)	651			402			75	66	526	48	66	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	740	773	372	400	297	4
Volume Left	21	0	18	0	11	1
Volume Right	0	53	0	47	284	3
cSH	651	1700	402	1700	414	162
Volume to Capacity	0.03	0.45	0.05	0.24	0.72	0.03
Queue Length 95th (ft)	2	0	4	0	138	2
Control Delay (s)	0.9	0.0	1.5	0.0	32.9	27.8
Lane LOS	A		A		D	D
Approach Delay (s)	0.4		0.7		32.9	27.8
Approach LOS					D	D

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	376	326	227	231	534	548
Average Queue (ft)	193	144	112	110	502	515
95th Queue (ft)	302	271	208	201	570	535
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			1	1	55	88
Queuing Penalty (veh)			2	2	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	513	452	346	214	263	262	327	276	249	193
Average Queue (ft)	404	336	215	54	230	234	203	160	141	89
95th Queue (ft)	516	435	322	131	249	251	296	255	222	181
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	3	0			49	50	0			
Queuing Penalty (veh)	0	0			386	396	0			
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			3							
Queuing Penalty (veh)			5							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	245	245	150	134	311	13
Average Queue (ft)	213	217	30	15	285	1
95th Queue (ft)	262	262	112	78	301	7
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	14	14	0		100	
Queuing Penalty (veh)	97	98	0		0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 987

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	542	0	0	559	280	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3505			3539	1770	1538
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3505			3539	1770	1538
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.92	0.92
Adj. Flow (vph)	583	0	0	588	304	866
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	583	0	0	588	304	866
Heavy Vehicles (%)	3%	0%	0%	2%	2%	5%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1927			1946	619	538
v/s Ratio Prot	c0.17			0.17	0.17	c0.56
v/s Ratio Perm						
v/c Ratio	0.30			0.30	0.49	1.61
Uniform Delay, d1	12.1			12.1	25.5	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.4			0.4	0.6	282.9
Delay (s)	12.6			12.5	26.1	315.4
Level of Service	B			B	C	F
Approach Delay (s)	12.6			12.5	240.2	
Approach LOS	B			B	F	

Intersection Summary			
HCM 2000 Control Delay	126.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1135	153	0	0	0	0	0	1356	291	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5036	1524						2733	3367	3471	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5036	1524						2733	3367	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1234	166	0	0	0	0	0	1474	316	442	0
RTOR Reduction (vph)	0	0	101	0	0	0	0	0	41	65	0	0
Lane Group Flow (vph)	0	1234	65	0	0	0	0	0	1433	251	442	0
Heavy Vehicles (%)	0%	3%	6%	2%	2%	2%	0%	0%	4%	4%	4%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		35.3	35.3						51.7	13.4	71.1	
Effective Green, g (s)		35.3	35.3						51.7	13.4	71.1	
Actuated g/C Ratio		0.30	0.30						0.44	0.11	0.61	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1514	458						1203	384	2102	
v/s Ratio Prot		c0.25							c0.52	c0.07	0.13	
v/s Ratio Perm			0.04									
v/c Ratio		0.82	0.14						1.19	0.65	0.21	
Uniform Delay, d1		38.0	30.0						32.9	49.8	10.5	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		3.5	0.1						94.6	4.0	0.2	
Delay (s)		41.5	30.1						127.4	53.8	10.7	
Level of Service		D	C						F	D	B	
Approach Delay (s)		40.2			0.0			127.4			28.6	
Approach LOS		D			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	73.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	117.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	1283	30	1	555	12	4	0	73	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	1296	30	1	584	13	4	0	79	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.95			0.92			0.94	0.94	0.92	0.94	0.94	0.95
vC, conflicting volume	597			1326			1656	1961	663	1370	1969	298
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	475			1178			1343	1667	456	1041	1676	161
tC, single (s)	5.2			4.1			8.0	6.5	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.2			3.8	4.0	3.4	3.5	4.0	3.3
p0 queue free %	97			100			95	100	84	99	100	100
cM capacity (veh/h)	744			551			83	89	487	144	87	820

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	673	678	293	305	84	1
Volume Left	25	0	1	0	4	1
Volume Right	0	30	0	13	79	0
cSH	744	1700	551	1700	388	144
Volume to Capacity	0.03	0.40	0.00	0.18	0.22	0.01
Queue Length 95th (ft)	3	0	0	0	20	1
Control Delay (s)	0.9	0.0	0.1	0.0	16.8	30.3
Lane LOS	A		A		C	D
Approach Delay (s)	0.5		0.0		16.8	30.3
Approach LOS					C	D

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	188	157	193	197	532	548
Average Queue (ft)	115	55	93	91	507	516
95th Queue (ft)	179	126	173	171	519	537
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0	48	88
Queuing Penalty (veh)			0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	458	408	277	78	246	257	215	181	176	143
Average Queue (ft)	327	273	157	44	219	224	138	87	91	28
95th Queue (ft)	431	369	253	75	249	258	204	188	160	87
Link Distance (ft)	481	481	481		201	201	422	422	422	422
Upstream Blk Time (%)	0	0			23	25				
Queuing Penalty (veh)	0	0			153	167				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			1							
Queuing Penalty (veh)			1							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	220	189	7	10	138	6
Average Queue (ft)	99	85	0	0	59	1
95th Queue (ft)	193	172	4	7	123	5
Link Distance (ft)	218	218	201	201	164	182
Upstream Blk Time (%)	0	0			2	
Queuing Penalty (veh)	1	0			0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 323

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	727	0	0	653	331	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3438	1787	1495
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3438	1787	1495
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.93	0.93
Adj. Flow (vph)	790	0	0	710	356	567
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	790	0	0	710	356	567
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1909			1890	625	523
v/s Ratio Prot	c0.23			0.21	0.20	c0.38
v/s Ratio Perm						
v/c Ratio	0.41			0.38	0.57	1.08
Uniform Delay, d1	13.1			12.8	26.4	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.7			0.6	1.2	64.1
Delay (s)	13.8			13.3	27.6	96.6
Level of Service	B			B	C	F
Approach Delay (s)	13.8			13.3	70.0	
Approach LOS	B			B	E	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1302	168	0	0	0	0	0	1466	339	533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1495						2733	3019	3223	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1495						2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1415	183	0	0	0	0	0	1593	368	579	0
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	43	64	0	0
Lane Group Flow (vph)	0	1415	87	0	0	0	0	0	1550	304	579	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		37.6	37.6						49.9	15.1	71.0	
Effective Green, g (s)		37.6	37.6						49.9	15.1	71.0	
Actuated g/C Ratio		0.31	0.31						0.42	0.13	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1553	470						1140	381	1913	
v/s Ratio Prot		c0.29							c0.57	c0.10	0.18	
v/s Ratio Perm			0.06									
v/c Ratio		0.91	0.19						1.36	0.80	0.30	
Uniform Delay, d1		39.4	29.8						34.8	50.8	12.0	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		8.4	0.2						167.8	11.1	0.4	
Delay (s)		47.8	30.0						202.6	61.9	12.4	
Level of Service		D	C						F	E	B	
Approach Delay (s)		45.8			0.0			202.6			31.7	
Approach LOS		D			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	102.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	1201	49	17	638	43	10	2	261	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1305	53	18	693	47	11	2	284	1	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.92			0.87			0.91	0.91	0.87	0.91	0.91	0.92
vC, conflicting volume	740			1359			1760	2151	679	1733	2154	370
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	546			1111			1244	1673	330	1213	1677	144
tC, single (s)	5.3			4.5			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			96			89	97	51	98	100	100
cM capacity (veh/h)	658			464			96	82	584	61	81	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	673	706	365	393	297	4
Volume Left	21	0	18	0	11	1
Volume Right	0	53	0	47	284	3
cSH	658	1700	464	1700	475	198
Volume to Capacity	0.03	0.42	0.04	0.23	0.63	0.02
Queue Length 95th (ft)	2	0	3	0	105	2
Control Delay (s)	0.9	0.0	1.3	0.0	24.4	23.6
Lane LOS	A		A		C	C
Approach Delay (s)	0.4		0.6		24.4	23.6
Approach LOS					C	C

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	389	349	230	219	542	541
Average Queue (ft)	193	137	115	112	487	511
95th Queue (ft)	313	274	207	189	618	538
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			1	0	48	76
Queuing Penalty (veh)			2	1	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	499	480	354	154	251	263	314	263	241	218
Average Queue (ft)	406	336	211	47	228	234	201	158	142	90
95th Queue (ft)	505	434	309	97	242	251	284	246	213	177
Link Distance (ft)	483	483	483		201	201	422	422	422	422
Upstream Blk Time (%)	2	0			48	51				
Queuing Penalty (veh)	0	0			354	371				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			2							
Queuing Penalty (veh)			3							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	264	246	171	147	295	18
Average Queue (ft)	216	217	23	14	286	1
95th Queue (ft)	258	255	103	79	298	9
Link Distance (ft)	218	218	201	201	275	182
Upstream Blk Time (%)	16	14	0	0	100	
Queuing Penalty (veh)	97	90	0	0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 919

Build (2023) Mitigated Conditions

HCM Unsignalized Intersection Capacity Analysis
2: D Street & Rutherford Avenue

3/11/2015

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	226	0	0	1428	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	246	0	0	1552	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1552	776	1552			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1552	776	1552			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	28	100			
cM capacity (veh/h)	104	340	423			

Direction, Lane #	EB 1	SB 1	SB 2
Volume Total	246	1035	517
Volume Left	0	0	0
Volume Right	246	0	0
cSH	340	1700	1700
Volume to Capacity	0.72	0.61	0.30
Queue Length 95th (ft)	134	0	0
Control Delay (s)	38.8	0.0	0.0
Lane LOS	E		
Approach Delay (s)	38.8	0.0	
Approach LOS	E		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	193	30	0	0	0	20	1846	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.91				
Frt		0.98						0.99				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		1829						5014				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		1829						5014				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	210	33	0	0	0	22	2007	202	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	240	0	0	0	0	0	2209	0	0	0	0
Turn Type		NA					Perm	NA				
Protected Phases		2						1				
Permitted Phases							1					
Actuated Green, G (s)		11.8						28.2				
Effective Green, g (s)		11.8						28.2				
Actuated g/C Ratio		0.24						0.56				
Clearance Time (s)		5.0						5.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		431						2827				
v/s Ratio Prot		c0.13										
v/s Ratio Perm								0.44				
v/c Ratio		0.56						0.78				
Uniform Delay, d1		16.8						8.5				
Progression Factor		1.10						0.75				
Incremental Delay, d2		1.5						1.8				
Delay (s)		19.9						8.2				
Level of Service		B						A				
Approach Delay (s)		19.9			0.0			8.2			0.0	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	0	0	0	0	226	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	246	0

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	0	0	246
Volume Left (vph)	0	0	246
Volume Right (vph)	0	0	0
Hadj (s)	0.00	0.00	0.23
Departure Headway (s)	4.4	4.4	4.1
Degree Utilization, x	0.00	0.00	0.28
Capacity (veh/h)	900	900	861
Control Delay (s)	7.4	7.4	8.8
Approach Delay (s)	0.0	0.0	8.8
Approach LOS	A	A	A

Intersection Summary			
Delay	8.8		
Level of Service	A		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	817	0	193	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0		5.0	5.0				
Lane Util. Factor					0.95		0.95	0.95				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.95				
Satd. Flow (prot)					3539		1681	1681				
Flt Permitted					1.00		0.95	0.95				
Satd. Flow (perm)					3539		1681	1681				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	888	0	210	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	79	79	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	888	0	26	26	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					1			2				
Permitted Phases							2					
Actuated Green, G (s)					28.2		11.8	11.8				
Effective Green, g (s)					28.2		11.8	11.8				
Actuated g/C Ratio					0.56		0.24	0.24				
Clearance Time (s)					5.0		5.0	5.0				
Vehicle Extension (s)					3.0		3.0	3.0				
Lane Grp Cap (vph)					1995		396	396				
v/s Ratio Prot					c0.25							
v/s Ratio Perm							c0.02	0.02				
v/c Ratio					0.45		0.06	0.06				
Uniform Delay, d1					6.3		14.8	14.8				
Progression Factor					1.00		0.01	0.01				
Incremental Delay, d2					0.7		0.1	0.1				
Delay (s)					7.1		0.2	0.2				
Level of Service					A		A	A				
Approach Delay (s)		0.0			7.1			0.2			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	2052	32	0	0	0	0	0	34	0	31	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0							5.0		5.0	
Lane Util. Factor		0.91							1.00		1.00	
Frt		1.00							0.86		1.00	
Flt Protected		1.00							1.00		1.00	
Satd. Flow (prot)		4752							822		950	
Flt Permitted		1.00							1.00		1.00	
Satd. Flow (perm)		4752							822		950	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2230	35	0	0	0	0	0	37	0	34	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	2262	0	0	0	0	0	0	4	0	34	0
Heavy Vehicles (%)	2%	9%	2%	2%	2%	2%	2%	2%	100%	2%	100%	2%
Turn Type		NA							Prot		NA	
Protected Phases		1							5		5	
Permitted Phases												
Actuated Green, G (s)		35.2							4.8		4.8	
Effective Green, g (s)		35.2							4.8		4.8	
Actuated g/C Ratio		0.70							0.10		0.10	
Clearance Time (s)		5.0							5.0		5.0	
Vehicle Extension (s)		3.0							3.0		3.0	
Lane Grp Cap (vph)		3345							78		91	
v/s Ratio Prot		c0.48							0.00		c0.04	
v/s Ratio Perm												
v/c Ratio		0.68							0.05		0.37	
Uniform Delay, d1		4.2							20.5		21.2	
Progression Factor		1.00							1.00		1.18	
Incremental Delay, d2		1.1							0.2		2.4	
Delay (s)		5.3							20.8		27.5	
Level of Service		A							C		C	
Approach Delay (s)		5.3			0.0			20.8			27.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	581	0	0	649	0	236	0	571	0	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		9.0			9.0			4.0	4.0			4.0
Lane Util. Factor		0.95			0.95			0.95	0.95			1.00
Frt		1.00			1.00			0.93	0.85			0.86
Flt Protected		1.00			1.00			0.97	1.00			1.00
Satd. Flow (prot)		3471			3438			1577	1421			1611
Flt Permitted		1.00			1.00			0.97	1.00			1.00
Satd. Flow (perm)		3471			3438			1577	1421			1611
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.92	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	632	0	0	705	0	254	0	614	0	0	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	632	0	0	705	0	0	450	418	0	0	0
Heavy Vehicles (%)	2%	4%	0%	0%	5%	2%	1%	2%	8%	2%	2%	2%
Turn Type		NA			NA		Split	NA	Prot			Prot
Protected Phases		1			1		5	5	5			6
Permitted Phases												
Actuated Green, G (s)		45.5			45.5			35.9	35.9			1.6
Effective Green, g (s)		45.5			45.5			35.9	35.9			1.6
Actuated g/C Ratio		0.46			0.46			0.36	0.36			0.02
Clearance Time (s)		9.0			9.0			4.0	4.0			4.0
Vehicle Extension (s)		3.0			3.0			3.0	3.0			3.0
Lane Grp Cap (vph)		1579			1564			566	510			25
v/s Ratio Prot		0.18			c0.21			0.29	c0.29			c0.00
v/s Ratio Perm												
v/c Ratio		0.40			0.45			0.80	0.82			0.01
Uniform Delay, d1		18.2			18.7			28.7	29.1			48.4
Progression Factor		1.00			1.51			1.00	1.00			1.00
Incremental Delay, d2		0.8			0.9			7.6	9.9			0.1
Delay (s)		18.9			29.0			36.3	39.1			48.5
Level of Service		B			C			D	D			D
Approach Delay (s)		18.9			29.0			37.6			48.5	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1876	3	0	0	0	0	0	542	504	551	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0							6.0	6.0	6.0	
Lane Util. Factor		0.91							0.88	0.97	0.95	
Frt		1.00							0.85	1.00	1.00	
Flt Protected		1.00							1.00	0.95	1.00	
Satd. Flow (prot)		4939							2733	3019	3223	
Flt Permitted		1.00							1.00	0.95	1.00	
Satd. Flow (perm)		4939							2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2039	3	0	0	0	0	0	589	548	599	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2042	0	0	0	0	0	0	589	548	599	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA							custom	Prot	NA	
Protected Phases		5							1 7	6	1 6	
Permitted Phases												
Actuated Green, G (s)		37.0							31.0	15.0	32.0	
Effective Green, g (s)		37.0							31.0	15.0	32.0	
Actuated g/C Ratio		0.37							0.31	0.15	0.32	
Clearance Time (s)		5.0								6.0		
Vehicle Extension (s)		3.0								3.0		
Lane Grp Cap (vph)		1827							847	452	1031	
v/s Ratio Prot		c0.41							c0.22	c0.18	0.19	
v/s Ratio Perm												
v/c Ratio		1.12							0.70	1.21	0.58	
Uniform Delay, d1		31.5							30.3	42.5	28.4	
Progression Factor		1.28							1.14	1.00	1.00	
Incremental Delay, d2		58.1							2.4	114.5	0.8	
Delay (s)		98.5							36.9	157.0	29.2	
Level of Service		F							D	F	C	
Approach Delay (s)		98.5			0.0			36.9			90.3	
Approach LOS		F			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	86.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	181	487	451	10	646	31	3	4	44	1	7	143
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.93			0.99			0.88			0.87	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1142	3000			3321			1654			1657	
Flt Permitted	0.33	1.00			0.76			0.92			1.00	
Satd. Flow (perm)	399	3000			2515			1529			1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	529	490	11	702	34	3	4	48	1	8	155
RTOR Reduction (vph)	0	93	0	0	2	0	0	44	0	0	141	0
Lane Group Flow (vph)	197	926	0	0	745	0	0	11	0	0	23	0
Heavy Vehicles (%)	58%	3%	21%	19%	5%	64%	20%	0%	0%	0%	0%	0%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	6	6 1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)	76.0	81.0			60.8			9.0			9.0	
Effective Green, g (s)	76.0	81.0			60.8			9.0			9.0	
Actuated g/C Ratio	0.76	0.81			0.61			0.09			0.09	
Clearance Time (s)	5.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	416	2430			1529			137			148	
v/s Ratio Prot	c0.07	0.31										
v/s Ratio Perm	0.29				c0.30			0.01			c0.01	
v/c Ratio	0.47	0.38			0.49			0.08			0.16	
Uniform Delay, d1	3.8	2.6			10.9			41.7			42.0	
Progression Factor	1.11	1.16			0.31			1.00			1.47	
Incremental Delay, d2	0.7	0.1			1.0			0.3			0.3	
Delay (s)	4.9	3.1			4.4			42.0			62.2	
Level of Service	A	A			A			D			E	
Approach Delay (s)		3.4			4.4			42.0			62.2	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 2: D Street & Rutherford Avenue

Movement	EB
Directions Served	R
Maximum Queue (ft)	120
Average Queue (ft)	65
95th Queue (ft)	113
Link Distance (ft)	302
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: MBTA Station Drive/Beacham St & Maffa Way

Movement	NB	SE	SE	SE
Directions Served	TR	LT	T	TR
Maximum Queue (ft)	263	318	324	328
Average Queue (ft)	112	299	296	293
95th Queue (ft)	215	313	317	311
Link Distance (ft)	260	280	280	280
Upstream Blk Time (%)	1	42	37	48
Queuing Penalty (veh)	2	288	255	331
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: D Street & Spice Street

Movement	SB
Directions Served	LR
Maximum Queue (ft)	71
Average Queue (ft)	41
95th Queue (ft)	61
Link Distance (ft)	385
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Beacham St & Main Street

Movement	WB	WB	NB	NB
Directions Served	T	T	L	LT
Maximum Queue (ft)	212	137	78	111
Average Queue (ft)	110	42	28	32
95th Queue (ft)	187	95	66	76
Link Distance (ft)	204	204	116	116
Upstream Blk Time (%)	0			0
Queuing Penalty (veh)	0			0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Maffa Way & MBTA Bus Only

Movement	SE	SE	SE	NE	SW
Directions Served	T	T	TR	R	T
Maximum Queue (ft)	176	179	176	122	108
Average Queue (ft)	147	146	146	71	48
95th Queue (ft)	170	169	166	124	105
Link Distance (ft)	119	119	119	65	91
Upstream Blk Time (%)	64	69	78	44	5
Queuing Penalty (veh)	0	0	0	0	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	T	T	T	T	LTR	R	R
Maximum Queue (ft)	238	329	240	247	374	308	61
Average Queue (ft)	70	178	167	160	236	181	11
95th Queue (ft)	162	292	247	238	356	292	41
Link Distance (ft)	678	678	217	217	497	497	210
Upstream Blk Time (%)			3	3			
Queuing Penalty (veh)			13	12			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	TR	R	R	L	L	T	T
Maximum Queue (ft)	288	290	295	226	211	445	401	279	219
Average Queue (ft)	276	266	265	140	132	313	259	146	87
95th Queue (ft)	289	281	282	212	204	469	421	280	191
Link Distance (ft)	246	246	246	210	210	422	422	422	422
Upstream Blk Time (%)	39	37	41	1	0	8	5	1	0
Queuing Penalty (veh)	241	232	256	2	1	0	0	0	0
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 58: Spice Street/MBTA Station Drive & Cambridge Street

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	189	87	142	132	138	83	104
Average Queue (ft)	79	15	35	47	26	32	39
95th Queue (ft)	150	56	114	110	99	62	81
Link Distance (ft)	217	217	217	210	210		260
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	1						
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1635

HCM Signalized Intersection Capacity Analysis
3: MBTA Station Drive/Beacham St & Maffa Way

1/6/2015

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	266	10	0	0	0	0	1272	199	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.91				
Frt		1.00						0.98				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		1854						4982				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		1854						4982				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	11	0	0	0	0	1383	216	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	38	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	0	0	0	1561	0	0	0	0
Turn Type		NA						NA				
Protected Phases		2						1				
Permitted Phases												
Actuated Green, G (s)		12.5						27.5				
Effective Green, g (s)		12.5						27.5				
Actuated g/C Ratio		0.25						0.55				
Clearance Time (s)		5.0						5.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		463						2740				
v/s Ratio Prot		c0.16						c0.31				
v/s Ratio Perm												
v/c Ratio		0.64						0.57				
Uniform Delay, d1		16.7						7.4				
Progression Factor		1.16						1.00				
Incremental Delay, d2		2.6						0.9				
Delay (s)		22.0						8.2				
Level of Service		C						A				
Approach Delay (s)		22.0			0.0			8.2			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1891	0	266	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0		5.0	5.0				
Lane Util. Factor					0.95		0.95	0.95				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.95				
Satd. Flow (prot)					3539		1681	1681				
Flt Permitted					1.00		0.95	0.95				
Satd. Flow (perm)					3539		1681	1681				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	2055	0	289	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	33	33	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2055	0	111	112	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					1			2				
Permitted Phases							2					
Actuated Green, G (s)					27.5		12.5	12.5				
Effective Green, g (s)					27.5		12.5	12.5				
Actuated g/C Ratio					0.55		0.25	0.25				
Clearance Time (s)					5.0		5.0	5.0				
Vehicle Extension (s)					3.0		3.0	3.0				
Lane Grp Cap (vph)					1946		420	420				
v/s Ratio Prot					c0.58							
v/s Ratio Perm							0.07	0.07				
v/c Ratio					1.06		0.26	0.27				
Uniform Delay, d1					11.2		15.1	15.1				
Progression Factor					1.00		0.06	0.06				
Incremental Delay, d2					37.1		0.3	0.3				
Delay (s)					48.3		1.3	1.3				
Level of Service					D		A	A				
Approach Delay (s)		0.0			48.3			1.3			0.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	739	0	0	664	331	638
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	0.95
Frt	1.00			1.00	0.95	0.85
Flt Protected	1.00			1.00	0.97	1.00
Satd. Flow (prot)	3471			3438	1688	1421
Flt Permitted	1.00			1.00	0.97	1.00
Satd. Flow (perm)	3471			3438	1688	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.93	0.93
Adj. Flow (vph)	803	0	0	722	356	686
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	803	0	0	722	541	501
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	1			1	5	5
Permitted Phases						
Actuated Green, G (s)	18.4			18.4	21.6	21.6
Effective Green, g (s)	18.4			18.4	21.6	21.6
Actuated g/C Ratio	0.37			0.37	0.43	0.43
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1277			1265	729	613
v/s Ratio Prot	c0.23			0.21	0.32	c0.35
v/s Ratio Perm						
v/c Ratio	0.63			0.57	0.74	0.82
Uniform Delay, d1	13.0			12.6	11.9	12.5
Progression Factor	1.00			1.38	1.00	1.00
Incremental Delay, d2	2.4			1.6	4.1	8.3
Delay (s)	15.3			19.1	16.0	20.8
Level of Service	B			B	B	C
Approach Delay (s)	15.3			19.1	18.3	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1280	3	0	0	0	0	0	1188	339	545	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0							6.0	6.0	6.0	
Lane Util. Factor		0.91							0.88	0.97	0.95	
Frt		1.00							0.85	1.00	1.00	
Flt Protected		1.00							1.00	0.95	1.00	
Satd. Flow (prot)		4938							2733	3019	3223	
Flt Permitted		1.00							1.00	0.95	1.00	
Satd. Flow (perm)		4938							2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1391	3	0	0	0	0	0	1291	368	592	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	477	346	0	0
Lane Group Flow (vph)	0	1394	0	0	0	0	0	0	814	22	592	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA							custom	Prot	NA	
Protected Phases		5							4	6	1 6	
Permitted Phases												
Actuated Green, G (s)		27.0							27.0	6.0	23.0	
Effective Green, g (s)		27.0							27.0	6.0	23.0	
Actuated g/C Ratio		0.27							0.27	0.06	0.23	
Clearance Time (s)		5.0							6.0	6.0		
Vehicle Extension (s)		3.0							3.0	3.0		
Lane Grp Cap (vph)		1333							737	181	741	
v/s Ratio Prot		c0.28							c0.30	0.01	c0.18	
v/s Ratio Perm												
v/c Ratio		1.05							1.10	0.12	0.80	
Uniform Delay, d1		36.5							36.5	44.5	36.3	
Progression Factor		0.80							0.82	1.00	1.00	
Incremental Delay, d2		35.4							63.2	0.3	6.0	
Delay (s)		64.6							93.0	44.8	42.3	
Level of Service		E							F	D	D	
Approach Delay (s)		64.6			0.0			93.0			43.3	
Approach LOS		E			A			F			D	

Intersection Summary			
HCM 2000 Control Delay	69.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	923	224	17	485	43	10	2	261	1	11	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.97			0.99			0.87			0.87	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1142	3290			3235			1640			1659	
Flt Permitted	0.37	1.00			0.69			0.97			1.00	
Satd. Flow (perm)	450	3290			2251			1593			1653	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1003	243	18	527	47	11	2	284	1	12	195
RTOR Reduction (vph)	0	16	0	0	6	0	0	129	0	0	165	0
Lane Group Flow (vph)	266	1230	0	0	586	0	0	168	0	0	43	0
Heavy Vehicles (%)	58%	3%	21%	19%	5%	64%	20%	0%	0%	0%	0%	0%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	6	6 1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)	69.7	74.7			47.5			15.3			15.3	
Effective Green, g (s)	69.7	74.7			47.5			15.3			15.3	
Actuated g/C Ratio	0.70	0.75			0.48			0.15			0.15	
Clearance Time (s)	5.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	467	2457			1069			243			252	
v/s Ratio Prot	c0.13	0.37										
v/s Ratio Perm	c0.27				0.26			c0.11			0.03	
v/c Ratio	0.57	0.50			0.55			0.69			0.17	
Uniform Delay, d1	6.4	5.1			18.6			40.1			36.8	
Progression Factor	1.02	0.94			0.55			1.00			2.28	
Incremental Delay, d2	1.2	0.1			1.2			8.2			0.3	
Delay (s)	7.7	4.9			11.5			48.4			84.3	
Level of Service	A	A			B			D			F	
Approach Delay (s)		5.4			11.5			48.4			84.3	
Approach LOS		A			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 3: MBTA Station Drive/Beacham St & Maffa Way

Movement	NB	SE	SE	SE
Directions Served	TR	T	T	TR
Maximum Queue (ft)	274	271	226	189
Average Queue (ft)	117	207	152	105
95th Queue (ft)	225	316	262	240
Link Distance (ft)	260	237	237	237
Upstream Blk Time (%)	1	16	14	18
Queuing Penalty (veh)	3	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Beacham St & Main Street

Movement	WB	WB	NB	NB
Directions Served	T	T	L	LT
Maximum Queue (ft)	248	247	88	90
Average Queue (ft)	217	203	35	38
95th Queue (ft)	256	273	74	77
Link Distance (ft)	204	204	117	117
Upstream Blk Time (%)	35	27		0
Queuing Penalty (veh)	0	0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	LR	R
Maximum Queue (ft)	714	720	226	243	523	510
Average Queue (ft)	686	692	122	133	376	309
95th Queue (ft)	774	724	219	228	579	548
Link Distance (ft)	671	671	223	223	493	493
Upstream Blk Time (%)	78	95	1	1	17	10
Queuing Penalty (veh)	0	0	2	4	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	TR	R	R	L	L	T	T
Maximum Queue (ft)	293	293	266	264	281	476	467	465	451
Average Queue (ft)	257	239	197	241	246	433	427	396	264
95th Queue (ft)	345	336	306	254	267	526	538	575	504
Link Distance (ft)	246	246	246	210	210	422	422	422	422
Upstream Blk Time (%)	24	12	6	68	68	80	78	49	3
Queuing Penalty (veh)	101	50	26	403	405	0	0	0	0
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 58: Spice Street/MBTA Station Drive & Cambridge Street

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	237	253	258	146	154	292	171
Average Queue (ft)	136	227	232	41	45	281	65
95th Queue (ft)	226	248	251	128	133	291	188
Link Distance (ft)	223	223	223	210	210	269	260
Upstream Blk Time (%)	1	22	33	1	1	100	7
Queuing Penalty (veh)	4	103	150	3	3	0	14
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1270

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	205	3	0	0	0	0	1121	178	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.91				
Frt		1.00						0.98				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		1859						4981				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		1859						4981				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	223	3	0	0	0	0	1218	193	0	0	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	225	0	0	0	0	0	1374	0	0	0	0
Turn Type		NA						NA				
Protected Phases		2						1				
Permitted Phases												
Actuated Green, G (s)		11.5						28.5				
Effective Green, g (s)		11.5						28.5				
Actuated g/C Ratio		0.23						0.57				
Clearance Time (s)		5.0						5.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		427						2839				
v/s Ratio Prot		c0.12						c0.28				
v/s Ratio Perm												
v/c Ratio		0.53						0.48				
Uniform Delay, d1		16.9						6.4				
Progression Factor		1.39						1.00				
Incremental Delay, d2		1.1						0.6				
Delay (s)		24.6						7.0				
Level of Service		C						A				
Approach Delay (s)		24.6			0.0			7.0			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1290	0	205	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0		5.0	5.0				
Lane Util. Factor					0.95		0.95	0.95				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.95				
Satd. Flow (prot)					3539		1681	1681				
Flt Permitted					1.00		0.95	0.95				
Satd. Flow (perm)					3539		1681	1681				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1402	0	223	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	34	34	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1402	0	77	78	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					1			2				
Permitted Phases							2					
Actuated Green, G (s)					28.5		11.5	11.5				
Effective Green, g (s)					28.5		11.5	11.5				
Actuated g/C Ratio					0.57		0.23	0.23				
Clearance Time (s)					5.0		5.0	5.0				
Vehicle Extension (s)					3.0		3.0	3.0				
Lane Grp Cap (vph)					2017		386	386				
v/s Ratio Prot					c0.40							
v/s Ratio Perm							0.05	0.05				
v/c Ratio					0.70		0.20	0.20				
Uniform Delay, d1					7.7		15.5	15.5				
Progression Factor					1.00		0.11	0.11				
Incremental Delay, d2					2.0		0.2	0.2				
Delay (s)					9.7		1.9	1.9				
Level of Service					A		A	A				
Approach Delay (s)		0.0			9.7			1.9			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	542	0	0	559	280	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	0.95
Frt	1.00			1.00	0.93	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	3505			3539	1659	1461
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	3505			3539	1659	1461
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.92	0.92
Adj. Flow (vph)	583	0	0	588	304	866
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	583	0	0	588	598	572
Heavy Vehicles (%)	3%	0%	0%	2%	2%	5%
Turn Type	NA			NA	NA	Prot
Protected Phases	1			1	5	5
Permitted Phases						
Actuated Green, G (s)	16.8			16.8	23.2	23.2
Effective Green, g (s)	16.8			16.8	23.2	23.2
Actuated g/C Ratio	0.34			0.34	0.46	0.46
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1177			1189	769	677
v/s Ratio Prot	c0.17			0.17	0.36	c0.39
v/s Ratio Perm						
v/c Ratio	0.50			0.49	0.78	0.84
Uniform Delay, d1	13.2			13.2	11.2	11.8
Progression Factor	1.00			1.55	1.00	1.00
Incremental Delay, d2	1.5			1.4	5.0	9.5
Delay (s)	14.7			21.9	16.2	21.3
Level of Service	B			C	B	C
Approach Delay (s)	14.7			21.9	18.7	
Approach LOS	B			C	B	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1123	2	0	0	0	0	0	984	291	407	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0							6.0	6.0	6.0	
Lane Util. Factor		0.91							0.88	0.97	0.95	
Frt		1.00							0.85	1.00	1.00	
Flt Protected		1.00							1.00	0.95	1.00	
Satd. Flow (prot)		5034							2733	3367	3471	
Flt Permitted		1.00							1.00	0.95	1.00	
Satd. Flow (perm)		5034							2733	3367	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1221	2	0	0	0	0	0	1070	316	442	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	478	296	0	0
Lane Group Flow (vph)	0	1223	0	0	0	0	0	0	592	20	442	0
Heavy Vehicles (%)	0%	3%	6%	2%	2%	2%	0%	0%	4%	4%	4%	0%
Turn Type		NA							custom	Prot	NA	
Protected Phases		5							4	6	1 6	
Permitted Phases												
Actuated Green, G (s)		26.8							27.0	6.2	23.2	
Effective Green, g (s)		26.8							27.0	6.2	23.2	
Actuated g/C Ratio		0.27							0.27	0.06	0.23	
Clearance Time (s)		5.0							6.0	6.0		
Vehicle Extension (s)		3.0							3.0	3.0		
Lane Grp Cap (vph)		1349							737	208	805	
v/s Ratio Prot		c0.24							c0.22	0.01	c0.13	
v/s Ratio Perm												
v/c Ratio		0.91							0.80	0.09	0.55	
Uniform Delay, d1		35.4							34.0	44.3	33.8	
Progression Factor		0.82							0.78	1.00	1.00	
Incremental Delay, d2		8.1							8.6	0.2	0.8	
Delay (s)		37.1							35.3	44.4	34.6	
Level of Service		D							D	D	C	
Approach Delay (s)		37.1			0.0			35.3			38.7	
Approach LOS		D			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	218	911	209	1	404	12	4	0	73	1	3	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.97			1.00			0.87			0.87	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1157	3409			3426			1492			1649	
Flt Permitted	0.48	1.00			0.88			0.92			1.00	
Satd. Flow (perm)	590	3409			3008			1381			1647	
Peak-hour factor, PHF	0.99	0.99	0.99	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	920	211	1	425	13	4	0	79	1	3	167
RTOR Reduction (vph)	0	10	0	0	1	0	0	72	0	0	152	0
Lane Group Flow (vph)	220	1121	0	0	438	0	0	11	0	0	19	0
Heavy Vehicles (%)	56%	2%	7%	0%	2%	100%	25%	0%	10%	0%	0%	0%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	6	6 1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)	76.0	81.0			56.2			9.0			9.0	
Effective Green, g (s)	76.0	81.0			56.2			9.0			9.0	
Actuated g/C Ratio	0.76	0.81			0.56			0.09			0.09	
Clearance Time (s)	5.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	560	2761			1690			124			148	
v/s Ratio Prot	0.08	c0.33										
v/s Ratio Perm	0.22				0.15			0.01			c0.01	
v/c Ratio	0.39	0.41			0.26			0.09			0.13	
Uniform Delay, d1	3.6	2.7			11.2			41.7			41.9	
Progression Factor	1.08	1.10			0.50			1.00			1.61	
Incremental Delay, d2	0.3	0.1			0.3			0.3			0.3	
Delay (s)	4.2	3.0			5.9			42.1			67.9	
Level of Service	A	A			A			D			E	
Approach Delay (s)		3.2			5.9			42.1			67.9	
Approach LOS		A			A			D			E	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 6: MBTA Station Drive/Beacham St & Maffa Way

Movement	NB	SE	SE	SE
Directions Served	TR	T	T	TR
Maximum Queue (ft)	240	265	232	182
Average Queue (ft)	99	160	102	77
95th Queue (ft)	187	264	226	205
Link Distance (ft)	254	237	237	237
Upstream Blk Time (%)	0	6	10	11
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Beacham St & Main Street

Movement	WB	WB	NB	NB
Directions Served	T	T	L	LT
Maximum Queue (ft)	231	186	88	84
Average Queue (ft)	163	82	28	25
95th Queue (ft)	256	161	72	62
Link Distance (ft)	204	204	117	117
Upstream Blk Time (%)	3	0	0	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	LR	R
Maximum Queue (ft)	709	712	208	230	545	534
Average Queue (ft)	645	661	119	128	445	397
95th Queue (ft)	866	807	188	209	611	601
Link Distance (ft)	671	671	222	222	493	493
Upstream Blk Time (%)	70	83	0	0	36	24
Queuing Penalty (veh)	0	0	0	1	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	TR	R	R	L	L	T	T
Maximum Queue (ft)	284	281	257	250	273	449	453	448	387
Average Queue (ft)	238	214	150	237	245	367	341	211	109
95th Queue (ft)	336	313	256	250	263	504	503	463	296
Link Distance (ft)	244	244	244	210	210	422	422	422	422
Upstream Blk Time (%)	13	5	2	68	69	34	28	10	1
Queuing Penalty (veh)	48	17	9	335	339	0	0	0	0
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 58: Spice Street/MBTA Station Drive & Cambridge Street

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	235	264	264	130	140	209	170
Average Queue (ft)	130	229	234	53	49	173	54
95th Queue (ft)	218	250	250	110	113	196	170
Link Distance (ft)	222	222	222	210	210	158	254
Upstream Blk Time (%)	1	26	37	0	0	98	8
Queuing Penalty (veh)	4	116	167	0	0	0	14
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1050

HCM Signalized Intersection Capacity Analysis
6: MBTA Station Drive/Beacham St & Maffa Way

1/9/2015

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	0	266	10	0	0	0	0	1254	199	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0				
Lane Util. Factor		1.00						0.91				
Frt		1.00						0.98				
Flt Protected		1.00						1.00				
Satd. Flow (prot)		1854						4981				
Flt Permitted		1.00						1.00				
Satd. Flow (perm)		1854						4981				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	289	11	0	0	0	0	1363	216	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	39	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	0	0	0	1540	0	0	0	0
Turn Type		NA						NA				
Protected Phases		2						1				
Permitted Phases												
Actuated Green, G (s)		12.5						27.5				
Effective Green, g (s)		12.5						27.5				
Actuated g/C Ratio		0.25						0.55				
Clearance Time (s)		5.0						5.0				
Vehicle Extension (s)		3.0						3.0				
Lane Grp Cap (vph)		463						2739				
v/s Ratio Prot		c0.16						c0.31				
v/s Ratio Perm												
v/c Ratio		0.64						0.56				
Uniform Delay, d1		16.7						7.3				
Progression Factor		1.20						1.00				
Incremental Delay, d2		2.6						0.8				
Delay (s)		22.8						8.2				
Level of Service		C						A				
Approach Delay (s)		22.8			0.0			8.2			0.0	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1743	0	266	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.0		5.0	5.0				
Lane Util. Factor					0.95		0.95	0.95				
Frt					1.00		1.00	1.00				
Flt Protected					1.00		0.95	0.95				
Satd. Flow (prot)					3539		1681	1681				
Flt Permitted					1.00		0.95	0.95				
Satd. Flow (perm)					3539		1681	1681				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1895	0	289	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	33	33	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1895	0	111	112	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					1			2				
Permitted Phases							2					
Actuated Green, G (s)					27.5		12.5	12.5				
Effective Green, g (s)					27.5		12.5	12.5				
Actuated g/C Ratio					0.55		0.25	0.25				
Clearance Time (s)					5.0		5.0	5.0				
Vehicle Extension (s)					3.0		3.0	3.0				
Lane Grp Cap (vph)					1946		420	420				
v/s Ratio Prot					c0.54							
v/s Ratio Perm							0.07	0.07				
v/c Ratio					0.97		0.26	0.27				
Uniform Delay, d1					10.9		15.1	15.1				
Progression Factor					1.00		0.06	0.06				
Incremental Delay, d2					15.1		0.3	0.3				
Delay (s)					26.0		1.1	1.1				
Level of Service					C		A	A				
Approach Delay (s)		0.0			26.0			1.1			0.0	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	727	0	0	653	331	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	0.95
Frt	1.00			1.00	0.96	0.85
Flt Protected	1.00			1.00	0.96	1.00
Satd. Flow (prot)	3471			3438	1712	1421
Flt Permitted	1.00			1.00	0.96	1.00
Satd. Flow (perm)	3471			3438	1712	1421
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.93	0.93
Adj. Flow (vph)	790	0	0	710	356	567
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	790	0	0	710	481	442
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	NA	Prot
Protected Phases	1			1	5	5
Permitted Phases						
Actuated Green, G (s)	20.1			20.1	19.9	19.9
Effective Green, g (s)	20.1			20.1	19.9	19.9
Actuated g/C Ratio	0.40			0.40	0.40	0.40
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1395			1382	681	565
v/s Ratio Prot	c0.23			0.21	0.28	c0.31
v/s Ratio Perm						
v/c Ratio	0.57			0.51	0.71	0.78
Uniform Delay, d1	11.6			11.3	12.6	13.2
Progression Factor	1.00			1.35	1.00	1.00
Incremental Delay, d2	1.7			1.2	3.3	7.0
Delay (s)	13.2			16.5	16.0	20.1
Level of Service	B			B	B	C
Approach Delay (s)	13.2			16.5	17.9	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1262	3	0	0	0	0	0	1065	339	533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0							6.0	6.0	6.0	
Lane Util. Factor		0.91							0.88	0.97	0.95	
Frt		1.00							0.85	1.00	1.00	
Flt Protected		1.00							1.00	0.95	1.00	
Satd. Flow (prot)		4938							2733	3019	3223	
Flt Permitted		1.00							1.00	0.95	1.00	
Satd. Flow (perm)		4938							2733	3019	3223	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1372	3	0	0	0	0	0	1158	368	579	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	477	346	0	0
Lane Group Flow (vph)	0	1375	0	0	0	0	0	0	681	22	579	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA							custom	Prot	NA	
Protected Phases		5							4	6	1 6	
Permitted Phases												
Actuated Green, G (s)		27.0							27.0	6.0	23.0	
Effective Green, g (s)		27.0							27.0	6.0	23.0	
Actuated g/C Ratio		0.27							0.27	0.06	0.23	
Clearance Time (s)		5.0							6.0	6.0		
Vehicle Extension (s)		3.0							3.0	3.0		
Lane Grp Cap (vph)		1333							737	181	741	
v/s Ratio Prot		c0.28							c0.25	0.01	c0.18	
v/s Ratio Perm												
v/c Ratio		1.03							0.92	0.12	0.78	
Uniform Delay, d1		36.5							35.5	44.5	36.1	
Progression Factor		0.80							0.84	1.00	1.00	
Incremental Delay, d2		31.0							17.5	0.3	5.4	
Delay (s)		60.2							47.1	44.8	41.5	
Level of Service		E							D	D	D	
Approach Delay (s)		60.2			0.0			47.1			42.8	
Approach LOS		E			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	23.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	245	800	224	17	473	43	10	2	261	1	11	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0			5.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.97			0.99			0.87			0.87	
Flt Protected	0.95	1.00			1.00			1.00			1.00	
Satd. Flow (prot)	1142	3265			3230			1640			1659	
Flt Permitted	0.39	1.00			0.70			0.95			1.00	
Satd. Flow (perm)	473	3265			2261			1555			1652	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	870	243	18	514	47	11	2	284	1	12	195
RTOR Reduction (vph)	0	18	0	0	5	0	0	173	0	0	169	0
Lane Group Flow (vph)	266	1095	0	0	574	0	0	124	0	0	39	0
Heavy Vehicles (%)	58%	3%	21%	19%	5%	64%	20%	0%	0%	0%	0%	0%
Turn Type	D.P+P	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	6	6 1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)	71.7	76.7			51.6			13.3			13.3	
Effective Green, g (s)	71.7	76.7			51.6			13.3			13.3	
Actuated g/C Ratio	0.72	0.77			0.52			0.13			0.13	
Clearance Time (s)	5.0				5.0			5.0			5.0	
Vehicle Extension (s)	3.0				3.0			3.0			3.0	
Lane Grp Cap (vph)	473	2504			1166			206			219	
v/s Ratio Prot	c0.11	0.34										
v/s Ratio Perm	c0.29				0.25			c0.08			0.02	
v/c Ratio	0.56	0.44			0.49			0.60			0.18	
Uniform Delay, d1	5.5	4.1			15.7			40.9			38.5	
Progression Factor	1.07	0.96			0.56			1.00			2.20	
Incremental Delay, d2	1.2	0.1			0.9			4.9			0.3	
Delay (s)	7.1	4.0			9.7			45.8			84.9	
Level of Service	A	A			A			D			F	
Approach Delay (s)		4.6			9.7			45.8			84.9	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 6: MBTA Station Drive/Beacham St & Maffa Way

Movement	NB	SE	SE	SE
Directions Served	TR	T	T	TR
Maximum Queue (ft)	262	271	254	198
Average Queue (ft)	120	212	145	80
95th Queue (ft)	227	299	256	184
Link Distance (ft)	260	237	237	237
Upstream Blk Time (%)	1	10	5	5
Queuing Penalty (veh)	2	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Beacham St & Main Street

Movement	WB	WB	NB	NB
Directions Served	T	T	L	LT
Maximum Queue (ft)	240	242	100	101
Average Queue (ft)	216	180	41	39
95th Queue (ft)	254	268	79	82
Link Distance (ft)	204	204	117	117
Upstream Blk Time (%)	24	14	0	0
Queuing Penalty (veh)	0	0	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	LR	R
Maximum Queue (ft)	662	668	227	226	384	315
Average Queue (ft)	534	580	99	115	239	145
95th Queue (ft)	954	896	182	192	367	280
Link Distance (ft)	671	671	223	223	493	493
Upstream Blk Time (%)	50	65	0	0		
Queuing Penalty (veh)	0	0	0	1		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	TR	R	R	L	L	T	T
Maximum Queue (ft)	290	291	257	264	273	481	476	473	445
Average Queue (ft)	266	247	200	242	247	447	443	411	257
95th Queue (ft)	312	298	282	257	265	483	483	562	486
Link Distance (ft)	246	246	246	210	210	422	422	422	422
Upstream Blk Time (%)	23	9	3	66	67	91	90	53	1
Queuing Penalty (veh)	96	38	14	348	357	0	0	0	0
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 58: Spice St/MBTA Station Drive & Cambridge Street

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	234	254	268	141	150	295	212
Average Queue (ft)	135	217	228	28	36	283	63
95th Queue (ft)	220	257	262	86	103	293	176
Link Distance (ft)	223	223	223	210	210	269	260
Upstream Blk Time (%)	1	11	20		0	100	4
Queuing Penalty (veh)	5	45	84		0	0	8
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

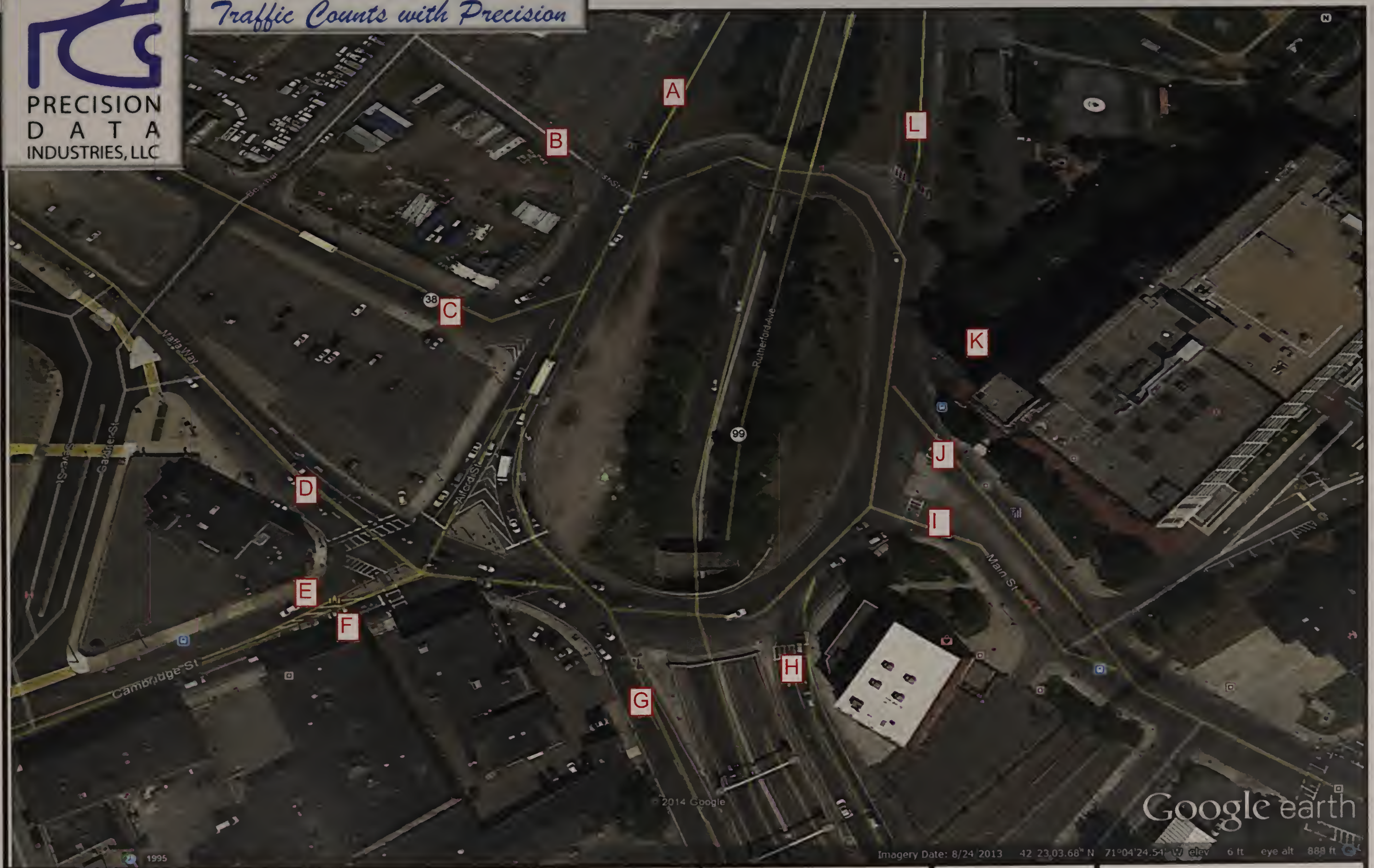
Zone wide Queuing Penalty: 999

Reassignment of Traffic Volumes

PRECISION DATA INDUSTRIES, LLC
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

Traffic Counts with Precision

PRECISION DATA INDUSTRIES, LLC



Client:	Engineer:	Site Code:	Date:	PDI Job Number:	City, State:
Howard/ Stein-Hudson	M. Tremblay	TBA	Fri 12/5 and Sat 12/6 2014	144208	Charlestown, MA

Sullivan Square Vehicle O/D Tracking
4-6pm
Friday 12/5/2014
PDI File# 144208

Exiting to: | Entering from:

	C			A	B	C	D	E	F	G	H	I	J	K	L
Cars	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	402	364	90.55%	66	0	[redacted]	0	[redacted]	45	[redacted]	150	[redacted]	95	8	[redacted]
4:15 PM	394	355	90.10%	66	1	[redacted]	0	[redacted]	59	[redacted]	132	[redacted]	90	7	[redacted]
4:30 PM	409	379	92.67%	66	0	[redacted]	0	[redacted]	92	[redacted]	116	[redacted]	102	3	[redacted]
4:45 PM	397	343	86.40%	58	0	[redacted]	0	[redacted]	45	[redacted]	124	[redacted]	109	7	[redacted]
5:00 PM	419	329	78.52%	65	0	[redacted]	1	[redacted]	51	[redacted]	103	[redacted]	101	8	[redacted]
5:15 PM	393	327	83.21%	75	0	[redacted]	0	[redacted]	34	[redacted]	119	[redacted]	96	3	[redacted]
5:30 PM	381	282	74.02%	61	0	[redacted]	0	[redacted]	33	[redacted]	105	[redacted]	79	4	[redacted]
5:45 PM	355	269	75.77%	53	0	[redacted]	0	[redacted]	34	[redacted]	110	[redacted]	72	0	[redacted]
						[redacted]		[redacted]		[redacted]		[redacted]			[redacted]
	3150	2648	84.06%	510	1	[redacted]	1	[redacted]	393	[redacted]	959	[redacted]	744	40	[redacted]
				19.26%	0.04%	[redacted]	0.04%	[redacted]	14.84%	[redacted]	36.22%	[redacted]	28.10%	1.51%	[redacted]

Exiting to: | Exiting to:

	C			A	B	C	D	E	F	G	H	I	J	K	L
Heavy Vehicles	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	14	15	107.14%	9	0	[redacted]	0	[redacted]	1	[redacted]	4	[redacted]	1	0	[redacted]
4:15 PM	13	15	115.38%	4	0	[redacted]	0	[redacted]	5	[redacted]	2	[redacted]	3	1	[redacted]
4:30 PM	12	12	100.00%	7	0	[redacted]	0	[redacted]	0	[redacted]	4	[redacted]	1	0	[redacted]
4:45 PM	15	15	100.00%	7	0	[redacted]	0	[redacted]	2	[redacted]	5	[redacted]	1	0	[redacted]
5:00 PM	8	9	112.50%	7	0	[redacted]	0	[redacted]	1	[redacted]	1	[redacted]	0	0	[redacted]
5:15 PM	6	7	116.67%	4	0	[redacted]	0	[redacted]	1	[redacted]	2	[redacted]	0	0	[redacted]
5:30 PM	11	12	109.09%	6	0	[redacted]	0	[redacted]	1	[redacted]	2	[redacted]	3	0	[redacted]
5:45 PM	11	11	100.00%	6	0	[redacted]	0	[redacted]	1	[redacted]	2	[redacted]	2	0	[redacted]
						[redacted]		[redacted]		[redacted]		[redacted]			[redacted]
	90	96	106.67%	50	0	[redacted]	0	[redacted]	12	[redacted]	22	[redacted]	11	1	[redacted]
				52.08%	0.00%	[redacted]	0.00%	[redacted]	12.50%	[redacted]	22.92%	[redacted]	11.46%	1.04%	[redacted]

Exiting to: | Exiting to:

	C			A	B	C	D	E	F	G	H	I	J	K	L
Combined	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	416	379	91.11%	75	0	[redacted]	0	[redacted]	46	[redacted]	154	[redacted]	96	8	[redacted]
4:15 PM	407	370	90.91%	70	1	[redacted]	0	[redacted]	64	[redacted]	134	[redacted]	93	8	[redacted]
4:30 PM	421	391	92.87%	73	0	[redacted]	0	[redacted]	92	[redacted]	120	[redacted]	103	3	[redacted]
4:45 PM	412	358	86.89%	65	0	[redacted]	0	[redacted]	47	[redacted]	129	[redacted]	110	7	[redacted]
5:00 PM	427	338	79.16%	72	0	[redacted]	1	[redacted]	52	[redacted]	104	[redacted]	101	8	[redacted]
5:15 PM	399	334	83.71%	79	0	[redacted]	0	[redacted]	35	[redacted]	121	[redacted]	96	3	[redacted]
5:30 PM	392	294	75.00%	67	0	[redacted]	0	[redacted]	34	[redacted]	107	[redacted]	82	4	[redacted]
5:45 PM	366	280	76.50%	59	0	[redacted]	0	[redacted]	35	[redacted]	112	[redacted]	74	0	[redacted]
						[redacted]		[redacted]		[redacted]		[redacted]			[redacted]
	3240	2744	84.69%	560	1	[redacted]	1	[redacted]	405	[redacted]	981	[redacted]	755	41	[redacted]
				20.41%	0.04%	[redacted]	0.04%	[redacted]	14.76%	[redacted]	35.75%	[redacted]	27.51%	1.49%	[redacted]

Sullivan Square Vehicle O/D Tracking
4-6pm
Friday 12/5/2014
PDI File# 144208

Exiting to: | Entering from:

Cars	E Cambridge Street SB	Tracked	% Tracked	A Alford St SB	B West Street	C	D Maffa Way EB	E	F Cambridge St NB	G	H Rutherford Ave NB	I	J Main Street WB	K Schrafft Driveway	L
4:00 PM	144	144	100.00%	49	0		43		0		40		12	0	
4:15 PM	136	137	100.74%	66	0		28		0		34		9	0	
4:30 PM	140	138	98.57%	62	1		35		0		35		5	0	
4:45 PM	124	120	96.77%	41	0		40		0		29		10	0	
5:00 PM	147	123	83.67%	46	0		34		0		28		15	0	
5:15 PM	137	121	88.32%	51	0		43		0		21		6	0	
5:30 PM	153	127	83.01%	47	0		52		0		26		2	0	
5:45 PM	139	130	93.53%	50	0		45		0		31		4	0	
	1120	1040	92.86%	412	1		320		0		244		63	0	
				39.62%	0.10%		30.77%		0.00%		23.46%		6.06%	0.00%	

Exiting to: | Exiting to:

Heavy Vehicles	E Cambridge Street SB	Tracked	% Tracked	A Alford St SB	B West Street	C	D Maffa Way EB	E	F Cambridge St NB	G	H Rutherford Ave NB	I	J Main Street WB	K Schrafft Driveway	L
4:00 PM	22	24	109.09%	10	0		6		0		2		6	0	
4:15 PM	14	14	100.00%	6	0		1		0		1		6	0	
4:30 PM	19	16	84.21%	12	0		2		0		0		1	1	
4:45 PM	19	18	94.74%	9	0		4		0		1		4	0	
5:00 PM	17	14	82.35%	3	0		5		0		0		6	0	
5:15 PM	11	9	81.82%	4	0		2		0		2		1	0	
5:30 PM	15	14	93.33%	3	0		3		0		3		5	0	
5:45 PM	14	12	85.71%	3	0		3		0		2		4	0	
	131	121	92.37%	50	0		26		0		11		33	1	
				41.32%	0.00%		21.49%		0.00%		9.09%		27.27%	0.83%	

Exiting to: | Exiting to:

Combined	E Cambridge Street SB	Tracked	% Tracked	A Alford St SB	B West Street	C	D Maffa Way EB	E	F Cambridge St NB	G	H Rutherford Ave NB	I	J Main Street WB	K Schrafft Driveway	L
4:00 PM	166	168	101.20%	59	0		49		0		42		18	0	
4:15 PM	150	151	100.67%	72	0		29		0		35		15	0	
4:30 PM	159	154	96.86%	74	1		37		0		35		6	1	
4:45 PM	143	138	96.50%	50	0		44		0		30		14	0	
5:00 PM	164	137	83.54%	49	0		39		0		28		21	0	
5:15 PM	148	130	87.84%	55	0		45		0		23		7	0	
5:30 PM	168	141	83.93%	50	0		55		0		29		7	0	
5:45 PM	153	142	92.81%	53	0		48		0		33		8	0	
	1251	1161	92.81%	462	1		346		0		255		96	1	
				39.79%	0.09%		29.80%		0.00%		21.96%		8.27%	0.09%	

Sullivan Square Vehicle O/D Tracking
4-6pm
Friday 12/5/2014
PDI File# 144208

Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Cars	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	175	162	92.57%	0	0		121		38		0		3	0	
4:15 PM	165	158	95.76%	4	0		116		37		0		1	0	
4:30 PM	179	167	93.30%	3	0		119		42		0		3	0	
4:45 PM	176	167	94.89%	2	0		126		38		1		0	0	
5:00 PM	191	179	93.72%	2	0		124		49		0		4	0	
5:15 PM	200	189	94.50%	1	0		148		36		1		3	0	
5:30 PM	182	170	93.41%	2	0		138		28		1		1	0	
5:45 PM	197	185	93.91%	1	0		147		35		0		2	0	
	1465	1377	93.99%	15	0		1039		303		3		17	0	
				1.09%	0.00%		75.45%		22.00%		0.22%		1.23%	0.00%	

Exiting to: G | Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Heavy Vehicles	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	11	9	81.82%	0	0		2		6		1		0	0	
4:15 PM	11	10	90.91%	0	0		6		3		1		0	0	
4:30 PM	12	11	91.67%	0	0		5		6		0		0	0	
4:45 PM	9	9	100.00%	1	0		1		2		3		2	0	
5:00 PM	9	8	88.89%	0	0		4		2		1		1	0	
5:15 PM	6	6	100.00%	0	0		4		0		1		1	0	
5:30 PM	7	6	85.71%	1	0		1		3		1		0	0	
5:45 PM	6	6	100.00%	0	0		4		1		0		1	0	
	71	65	91.55%	2	0		27		23		8		5	0	
				3.08%	0.00%		41.54%		35.38%		12.31%		7.69%	0.00%	

Exiting to: G | Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Combined	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
4:00 PM	186	171	91.94%	0	0		123		44		1		3	0	
4:15 PM	176	168	95.45%	4	0		122		40		1		1	0	
4:30 PM	191	178	93.19%	3	0		124		48		0		3	0	
4:45 PM	185	176	95.14%	3	0		127		40		4		2	0	
5:00 PM	200	187	93.50%	2	0		128		51		1		5	0	
5:15 PM	206	195	94.66%	1	0		152		36		2		4	0	
5:30 PM	189	176	93.12%	3	0		139		31		2		1	0	
5:45 PM	203	191	94.09%	1	0		151		36		0		3	0	
	1536	1442	93.88%	17	0		1066		326		11		22	0	
				1.18%	0.00%		73.93%		22.61%		0.76%		1.53%	0.00%	

Sullivan Square Vehicle O/D Tracking
4-6pm
Saturday 12/6/2014
PDI File# 144208

Exiting to: C | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Cars	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	310	269	86.77%	61	1		0		42		102		63	0	
2:15 PM	302	280	92.72%	78	0		1		39		105		57	0	
2:30 PM	319	276	86.52%	66	0		0		36		109		65	0	
2:45 PM	315	268	85.08%	58	0		1		40		102		67	0	
3:00 PM	289	271	93.77%	50	0		0		51		110		60	0	
3:15 PM	274	272	99.27%	64	0		0		55		91		62	0	
3:30 PM	270	266	98.52%	75	0		0		43		85		63	0	
3:45 PM	231	225	97.40%	59	0		0		46		70		50	0	
	2310	2127	92.08%	511	1		2		352		774		487	0	
				24.02%	0.05%		0.09%		16.55%		36.39%		22.90%	0.00%	

Exiting to: C | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Heavy Vehicles	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	11	11	100.00%	7	0		0		0		2		2	0	
2:15 PM	7	9	128.57%	3	0		0		2		4		0	0	
2:30 PM	6	6	100.00%	2	0		0		0		4		0	0	
2:45 PM	8	10	125.00%	6	0		0		1		2		1	0	
3:00 PM	7	6	85.71%	4	0		0		1		0		1	0	
3:15 PM	8	8	100.00%	4	0		0		1		3		0	0	
3:30 PM	5	6	120.00%	3	0		0		1		2		0	0	
3:45 PM	9	12	133.33%	5	0		0		1		1		5	0	
	61	68	111.48%	34	0		0		7		18		9	0	
				50.00%	0.00%		0.00%		10.29%		26.47%		13.24%	0.00%	

Exiting to: C | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Combined	Main Street WB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	321	280	87.23%	68	1		0		42		104		65	0	
2:15 PM	309	289	93.53%	81	0		1		41		109		57	0	
2:30 PM	325	282	86.77%	68	0		0		36		113		65	0	
2:45 PM	323	278	86.07%	64	0		1		41		104		68	0	
3:00 PM	296	277	93.58%	54	0		0		52		110		61	0	
3:15 PM	282	280	99.29%	68	0		0		56		94		62	0	
3:30 PM	275	272	98.91%	78	0		0		44		87		63	0	
3:45 PM	240	237	98.75%	64	0		0		47		71		55	0	
	2371	2195	92.58%	545	1		2		359		792		496	0	
				24.83%	0.05%		0.09%		16.36%		36.08%		22.60%	0.00%	

Sullivan Square Vehicle O/D Tracking
4-6pm
Saturday 12/6/2014
PDI File# 144208

Exiting to: / Entering from:

	E			A	B	C	D	E	F	G	H	I	J	K	L
Cars	Cambridge Street SB	Tracked	% Tracked	Alford St SB	West Street		Maffa Way EB		Cambridge St NB		Rutherford Ave NB		Main Street WB	Schrafft Driveway	
2:00 PM	120	103	85.83%	45	0		33		0		15		10	0	
2:15 PM	138	129	93.48%	57	0		50		0		13		9	0	
2:30 PM	133	125	93.98%	60	0		36		0		20		9	0	
2:45 PM	128	119	92.97%	51	0		39		0		19		10	0	
3:00 PM	101	99	98.02%	50	1		27		0		13		8	0	
3:15 PM	134	121	90.30%	59	0		33		0		22		7	0	
3:30 PM	123	119	96.75%	50	0		43		0		16		10	0	
3:45 PM	119	115	96.64%	58	0		34		0		11		12	0	
	996	930	93.37%	430	1		295		0		129		75	0	
				46.24%	0.11%		31.72%		0.00%		13.87%		8.06%	0.00%	

Exiting to: / Entering from:

	E			A	B	C	D	E	F	G	H	I	J	K	L
Heavy Vehicles	Cambridge Street SB	Tracked	% Tracked	Alford St SB	West Street		Maffa Way EB		Cambridge St NB		Rutherford Ave NB		Main Street WB	Schrafft Driveway	
2:00 PM	6	6	100.00%	3	0		2		0		0		1	0	
2:15 PM	4	5	125.00%	2	0		1		0		0		2	0	
2:30 PM	12	8	66.67%	2	0		5		0		0		1	0	
2:45 PM	7	8	114.29%	6	0		2		0		0		0	0	
3:00 PM	7	7	100.00%	2	0		3		0		0		2	0	
3:15 PM	4	5	125.00%	0	0		2		0		0		3	0	
3:30 PM	6	5	83.33%	2	0		2		0		0		1	0	
3:45 PM	6	4	66.67%	1	0		3		0		0		0	0	
	52	48	92.31%	18	0		20		0		0		10	0	
				37.50%	0.00%		41.67%		0.00%		0.00%		20.83%	0.00%	

Exiting to: / Entering from:

	E			A	B	C	D	E	F	G	H	I	J	K	L
Combined	Cambridge Street SB	Tracked	% Tracked	Alford St SB	West Street		Maffa Way EB		Cambridge St NB		Rutherford Ave NB		Main Street WB	Schrafft Driveway	
2:00 PM	126	109	86.51%	48	0		35		0		15		11	0	
2:15 PM	142	134	94.37%	59	0		51		0		13		11	0	
2:30 PM	145	133	91.72%	62	0		41		0		20		10	0	
2:45 PM	135	127	94.07%	57	0		41		0		19		10	0	
3:00 PM	108	106	98.15%	52	1		30		0		13		10	0	
3:15 PM	138	126	91.30%	59	0		35		0		22		10	0	
3:30 PM	129	124	96.12%	52	0		45		0		16		11	0	
3:45 PM	125	119	95.20%	59	0		37		0		11		12	0	
	1048	978	93.32%	448	1		315		0		129		85	0	
				45.81%	0.10%		32.21%		0.00%		13.19%		8.69%	0.00%	

Sullivan Square Vehicle O/D Tracking
4-6pm
Saturday 12/6/2014
PDI File# 144208

Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Cars	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	198	194	97.98%	14	9		137		34		0		0	0	
2:15 PM	211	198	93.84%	12	1		130		53		0		2	0	
2:30 PM	187	179	95.72%	4	0		115		56		0		4	0	
2:45 PM	192	179	93.23%	4	0		129		44		0		2	0	
3:00 PM	180	182	101.11%	13	0		115		52		1		1	0	
3:15 PM	190	178	93.68%	16	0		120		42		0		0	0	
3:30 PM	152	147	96.71%	11	0		101		34		0		1	0	
3:45 PM	163	159	97.55%	7	0		111		36		1		4	0	
	1473	1416	96.13%	81	10		958		351		2		14	0	
				5.72%	0.71%		67.66%		24.79%		0.14%		0.99%	0.00%	

Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Heavy Vehicles	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	4	4	100.00%	0	0		3		1		0		0	0	
2:15 PM	6	5	83.33%	2	0		1		2		0		0	0	
2:30 PM	5	6	120.00%	2	0		4		0		0		0	0	
2:45 PM	3	3	100.00%	1	0		1		1		0		0	0	
3:00 PM	6	6	100.00%	0	0		4		2		0		0	0	
3:15 PM	5	5	100.00%	1	0		0		4		0		0	0	
3:30 PM	2	2	100.00%	1	0		1		0		0		0	0	
3:45 PM	1	1	100.00%	0	0		0		1		0		0	0	
	32	32	100.00%	7	0		14		11		0		0	0	
				21.88%	0.00%		43.75%		34.38%		0.00%		0.00%	0.00%	

Exiting to: G | Entering from: A, B, C, D, E, F, G, H, I, J, K, L

Combined	Rutherford Avenue SB	Tracked	% Tracked	Alford St SB	West Street	[redacted]	Maffa Way EB	[redacted]	Cambridge St NB	[redacted]	Rutherford Ave NB	[redacted]	Main Street WB	Schrafft Driveway	[redacted]
2:00 PM	202	198	98.02%	14	9		140		35		0		0	0	
2:15 PM	217	203	93.55%	14	1		131		55		0		2	0	
2:30 PM	192	185	96.35%	6	0		119		56		0		4	0	
2:45 PM	195	182	93.33%	5	0		130		45		0		2	0	
3:00 PM	186	188	101.08%	13	0		119		54		1		1	0	
3:15 PM	195	183	93.85%	17	0		120		46		0		0	0	
3:30 PM	154	149	96.75%	12	0		102		34		0		1	0	
3:45 PM	164	160	97.56%	7	0		111		37		1		4	0	
	1505	1448	96.21%	88	10		972		362		2		14	0	
				6.08%	0.69%		67.13%		25.00%		0.14%		0.97%	0.00%	

AM

	AM	Alford St	Maffa Way	Cambridge	Rutherford	Main St S	EXIT
				FROM			
	Alford St	55	165	195	30	70	515
	Main St N	245	130	130	155	200	860
TO	Cambridge	340	310	90	60	95	895
	Rutherford	125	880	220	35	40	1300
	Main St S	135	350	175	60	55	775
	ENTER	**900**	**1835**	**810**	**340**	**460**	***4345***

AM	Alford St	Maffa Way	Cambridge	Rutherford	Main St S	EXIT
Alford St	1.3%	3.8%	4.5%	0.7%	1.6%	12%
Main St N	5.6%	3.0%	3.0%	3.6%	4.6%	20%
Cambridge	7.8%	7.1%	2.1%	1.4%	2.2%	21%
Rutherford	2.9%	20.3%	5.1%	0.8%	0.9%	30%
Main St S	3.1%	8.1%	4.0%	1.4%	1.3%	18%
ENTER	**21%**	**42%**	**19%**	**8%**	**11%**	***100%***

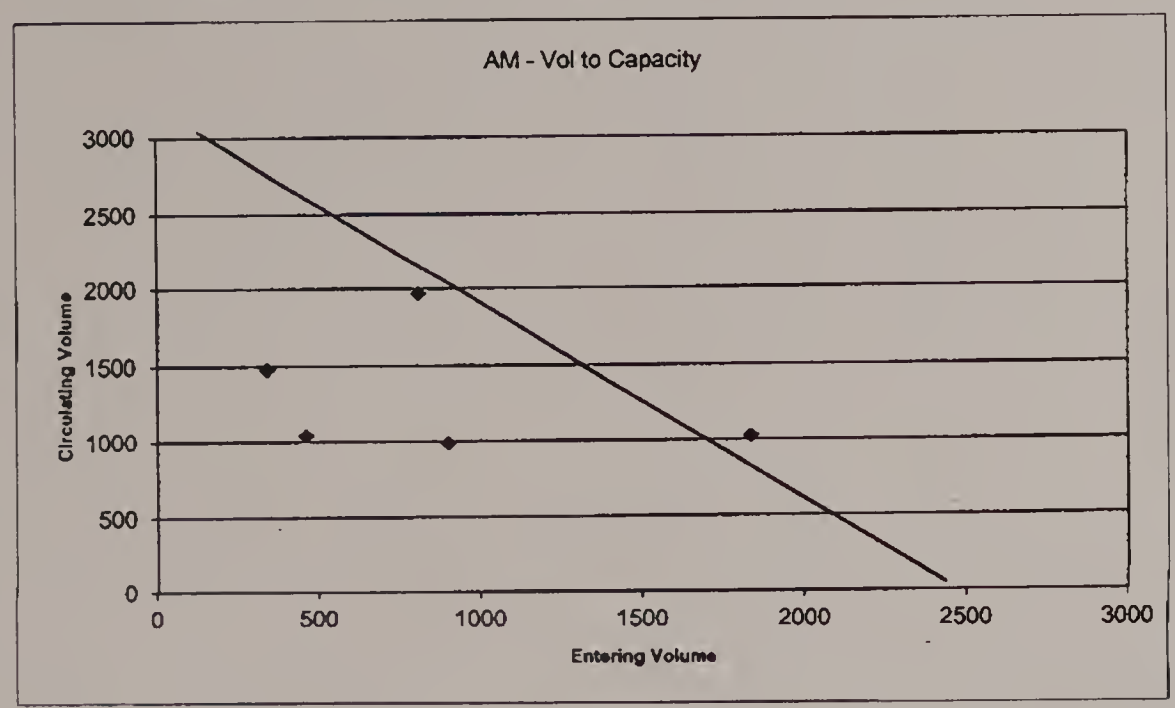
UNDERPA	NB	200
	SB	1300
Add to Matrix		0

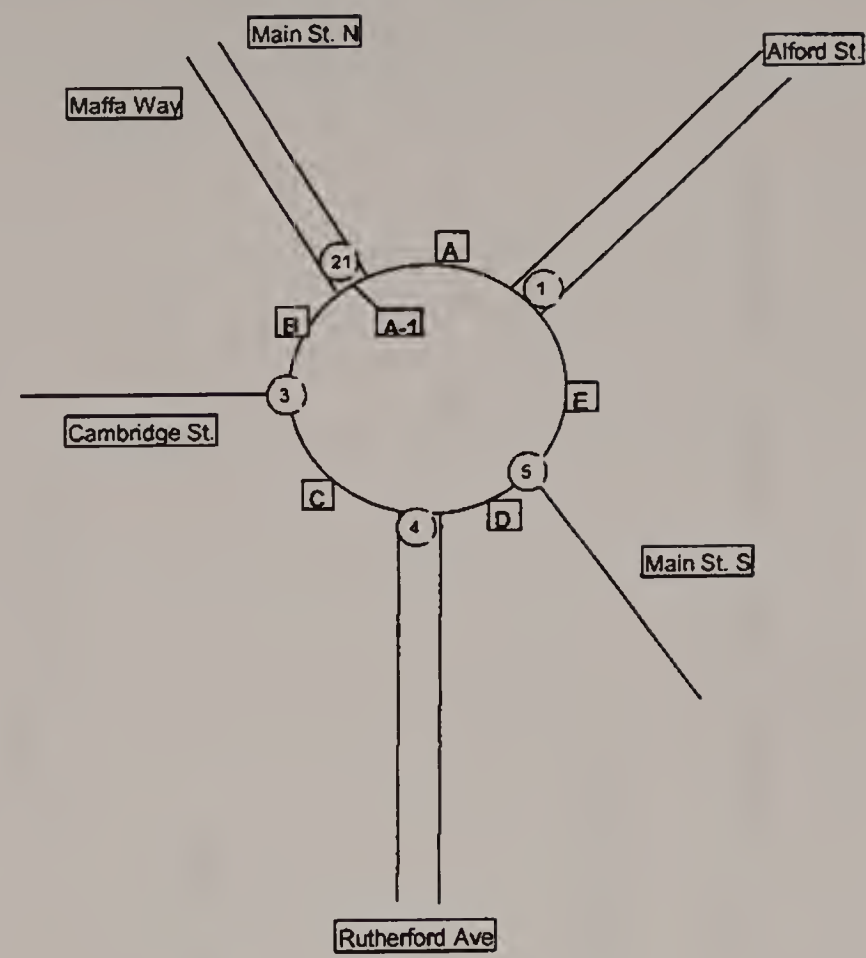
Segment Volumes

	A	1890
A-1		1030
	B	2865
	C	2780
	D	1820
	E	1505

Intersection Volumes

	Entering	Circulating	(Exiting)
1	900	990	515
2	1835	1030	860
3	810	1970	895
4	340	1480	1300
5	460	1045	775





HOWARD/STEIN-HUDSON. ASSOCIATES
363 Boston Street
Topsfield, Ma 01983
(978) 986-4866

JOB
SHEET NO. OF
CALCULATED BY DATE
CHECKED BY DATE
SCALE

Re-routing existing Cambridge Street Volumes

Cambridge St. to Rutherford Ave.
AM: 225 vph
PM: 175 vph
SAT: 179 vph

Cambridge St. to Main St.
AM: 135 vph
PM: 226 vph
SAT: 193 vph

VISSIM Output

Sullivan Square Analysis 01-30-201S	Existing VISSIM Analysis				Build Mitigated VISSIM Analysis				Build Mitigated Synchro Analysis			
Intersection/Movement	Observed Vehicles	Average Delay (sec)	LOS	Average Queue (ft)	Observed Vehicles	Average Delay (sec)	LOS	Average Queue (ft)	Observed Vehicles	Average Delay (sec)	LOS	Average Queue (ft)
Cambridge St/Alford St/Maffa Way	**3467**	**48.8**	**D**	**175.2**	**2929**	**43.5**	**D**	**-**	**-**	**48.6**	**D**	**-**
Cambridge St EB to Rutherford Ave SB	508	43.9	D	134.8	-	-	-	-	-	-	-	-
Cambridge St EB to Sullivan Traffic Circle	744	48.2	D	134.8	1027	26.9	C	92.5	1065	38.7	D	303
Maffa Way EB to Cambridge St WB	747	84.6	F	459.4	-	-	-	-	3	59.8	E	346
Maffa Way EB to Rutherford Ave SB	219	37.9	D	46.8	445	54.1	D	220.0	1262			
Maffa Way EB to Sullivan Traffic Circle	192	81.5	F	459.4	777	73.1	E	220.0				
Alford St SB to Cambridge St WB	41	49.6	D	68.3	520	19.0	B	28.5	533	32.0	C	82
Alford St SB to Rutherford Ave SB	845	13.4	B	29.5	29	49.4	D	42.5	339	64.7	E	121
Alford St SB to Sullivan Traffic Circle	170	61.2	E	68.3	131	57.0	E	42.5				
Cambridge St/I-93 Off Ramp	**2288**	**48.2**	**D**	**227.7**	**2190**	**20.1**	**C**	**-**	**-**	**26.1**	**C**	**-**
Cambridge St EB thru	642	58.8	E	108.8	497	22.0	C	47.5	727	19.5	B	168
Cambridge St EB to Cambridge St EB left-turn					221	26.1	C	47.5				
Cambridge St WB thru	1075	13.6	B	47.7	610	16.5	B	32.9	653	8.4	A	39
I-93 Off Ramp left to Cambridge St WB	252	81.6	F	374.1	333	19.9	B	53.2	331	41.6	D	280
I-93 Off Ramp right to Cambridge St EB	319	126.2	F	380.2	505	19.5	B	53.2	527	49.3	D	262
I-93 Offramp NB right to Cambridge St EB left-turn					16	24.9	C	53.2				
Busway SB right	-	-	-	-	7	53.8	D	3.8	7	48.7	D	0
NW Sullivan Square	**2677**	**17.8**	**C**	**47.8**	**2313**	**5.4**	**A**	**-**	**-**	**-**	**-**	**-**
Alford St SB to Main St WB	567	1.7	A	0.0	610	1.6	A	0.0	-	-	-	-
Alford St SB to Sullivan Traffic Circle	707	46.1	E	140.9	464	18.5	C	36.6	-	-	-	-
Sullivan Traffic Circle thru	1404	10.1	B	2.5	1239	2.4	A	0.0	-	-	-	-
Sullivan Square- Main St East	**2403**	**17.8**	**C**	**629.8**	**2862**	**13.8**	**B**	**-**	**-**	**-**	**-**	**-**
Main St WB to Sullivan Traffic Circle	552	64.1	F	1255.2	659	53.4	F	1178.5	-	-	-	-
Sullivan Traffic Circle thru	1851	3.9	A	4.4	2203	2.0	A	1.2	-	-	-	-
Sullivan Square- Rutherford Ave NB	**2526**	**33.6**	**D**	**730.2**	**2739**	**9.9**	**B**	**-**	**-**	**-**	**-**	**-**
Sullivan Traffic Circle thru	1660	1.6	A	4.1	1402	1.3	A	0.1	-	-	-	-
Sullivan Circle to Main St SB					530	2.5	A	0.1	-	-	-	-
Rutherford Ave NB to Sullivan Traffic Circle	867	95.0	F	1456.3	801	29.5	E	85.1	-	-	-	-
Rutherford Ave NB to Main St SB					5	28.3	C	85.1	-	-	-	-
Cambridge St/Spice St	-	-	-	-	**2175**	**23.7**	**C**	-	-	**16.8**	**B**	**-**
Cambridge St EB left	-	-	-	-	239	38.6	D	60.7	245	8.5	A	21
Cambridge St EB thru	-	-	-	-	784	13.7	B	37.9	800	2.2	A	47
Cambridge St EB right	-	-	-	-	217	11.1	B	37.9	224			
Cambridge St WB left					17	29.6	C	34.4	17	14.1	B	105
Cambridge St WB thru	-	-	-	-	466	21.8	C	34.4	473			
Cambridge St WB right					39	22.9	B	34.4	43			
Spice St NB left	-	-	-	-	11	46.5	D	62.0	10	45.8	D	59
Spice St NB thru	-	-	-	-	1	43.5	D	62.0	2			
Spice St NB right	-	-	-	-	253	43.3	D	62.0	261			
Busway SB left	-	-	-	-	0	0.0	A	34.4	1	85.2	F	38
Busway St SB thru	-	-	-	-	12	46.8	D	34.4	11			
Busway St SB right	-	-	-	-	136	41.6	D	34.4	179			
Beacham St at Main St Overall	**-**	**-**	**-**	**-**	**1966**	**7.3**	**A**	**-**	**-**	**23.2**	**C**	**-**
Main St WB left (BUS)	-	-	-	-	22	11.1	B	29.5	0	-	-	-
Main St WB thru	-	-	-	-	1608	7.1	A	29.5	1743	26.7	C	283
Beacham St NB left	-	-	-	-	5	7.2	A	14.2	288	1.9	A	0
Beacham St NB left (BUS)	-	-	-	-	331	8.4	A	14.2				
Beacham St NB thru	-	-	-	-	0	0.0	A	14.2	0	1.9	A	0
Maffa Way at Busway NORTH Overall	-	-	-	-	**1432**	88.8	**F**	-	-	4.4	A	-
Maffa Way EB thru	-	-	-	-	1336	92.8	F	718.6	1475	2.5	A	0
Maffa Way EB right	-	-	-	-	27	45.3	D	718.6	27			
Busway SB thru	-	-	-	-	42	30.3	C	1.3	29	101.7	F	7
Busway NB right	-	-	-	-	28	28.8	C	6.1	40	-	-	-
Maffa Way at Busway SOUTH Overall	-	-	-	-	**1706.6**	**39.6**	**D**	-	-	9.9	A	-
Maffa Way EB left	-	-	-	-	23	40.6	C	221.1	22	7.7	A	100
Maffa Way EB thru	-	-	-	-	1205	47.4	B	221.1	1254			
Maffa Way EB right	-	-	-	-	153	21.2	C	221.1	199			
Busway NB thru	-	-	-	-	316	19.4	D	14.2	266	21.8	C	83
Busway NB right	-	-	-	-	9	20.6	C	4.0	10			

2013 Existing Conditions Synchro Output and CASTs

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Volume (vph)	726	0	0	602	359	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3471	0	0	3471	1736	1482
Flt Permitted					0.950	
Satd. Flow (perm)	3471	0	0	3471	1736	1482
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	704			584	536	
Travel Time (s)	16.0			13.3	12.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.78	0.78	0.84	0.84	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	0%	0%	4%	4%	9%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	931	0	0	717	443	567
Shared Lane Traffic (%)						
Lane Group Flow (vph)	931	0	0	717	443	567
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Detector Phase	2			6	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	20.0			20.0	13.0	13.0
Total Split (s)	60.0			60.0	40.0	40.0
Total Split (%)	60.0%			60.0%	40.0%	40.0%
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effct Green (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
v/c Ratio	0.49			0.38	0.73	1.09
Control Delay	14.9			13.5	36.7	100.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	14.9			13.5	36.7	100.4
LOS	B			B	D	F
Approach Delay	14.9			13.5	72.5	
Approach LOS	B			B	E	
Queue Length 50th (ft)	181			128	244	~410
Queue Length 95th (ft)	189			154	310	#521
Internal Link Dist (ft)	624			504	456	
Turn Bay Length (ft)						
Base Capacity (vph)	1909			1909	607	518
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.49			0.38	0.73	1.09

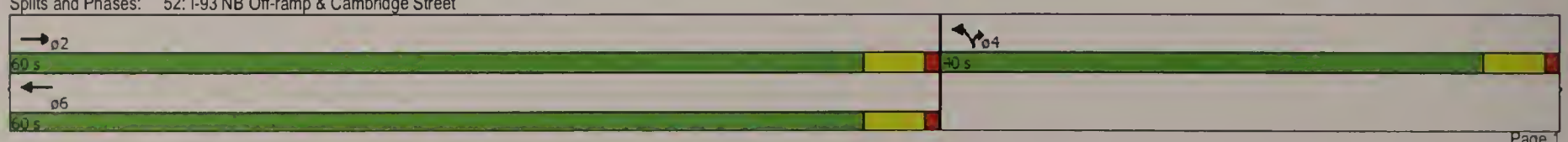
Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 36.4 — Intersection LOS: D
Intersection Capacity Utilization 56.8% — ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 52: I-93 NB Off-ramp & Cambridge Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	726	0	0	602	359	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3471	1736	1482
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3471	1736	1482
Peak-hour factor, PHF	0.78	0.78	0.84	0.84	0.81	0.81
Adj. Flow (vph)	931	0	0	717	443	567
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	931	0	0	717	443	567
Heavy Vehicles (%)	4%	0%	0%	4%	4%	9%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.0			55.0	35.0	35.0
Effective Green, g (s)	55.0			55.0	35.0	35.0
Actuated g/C Ratio	0.55			0.55	0.35	0.35
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1909			1909	607	518
v/s Ratio Prot	c0.27			0.21	0.26	c0.38
v/s Ratio Perm						
v/c Ratio	0.49			0.38	0.73	1.09
Uniform Delay, d1	13.8			12.8	28.4	32.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9			0.6	4.4	67.8
Delay (s)	14.7			13.3	32.8	100.3
Level of Service	B			B	C	F
Approach Delay (s)	14.7			13.3	70.7	
Approach LOS	B			B	E	

Intersection Summary			
HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1350	118	0	0	0	0	0	982	247	509	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		2	2		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected										0.950		
Satd. Flow (prot)	0	4940	1482	0	0	0	0	0	2760	3335	3252	0
Flt Permitted										0.950		
Satd. Flow (perm)	0	4940	1482	0	0	0	0	0	2760	3335	3252	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			94						73	73		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		553			345			584			445	
Travel Time (s)		12.6			7.8			13.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	5%	9%	2%	2%	2%	0%	0%	3%	5%	11%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1570	137	0	0	0	0	0	1116	263	541	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1570	137	0	0	0	0	0	1116	263	541	0
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Detector Phase		4	4						2	1	6	
Switch Phase												
Minimum Initial (s)		8.0	8.0						8.0	8.0	8.0	
Minimum Split (s)		27.0	27.0						14.0	14.0	28.0	
Total Split (s)		43.0	43.0						55.0	22.0	77.0	
Total Split (%)		35.8%	35.8%						45.8%	18.3%	64.2%	
Yellow Time (s)		3.0	3.0						3.0	3.0	3.0	
All-Red Time (s)		2.0	2.0						3.0	3.0	3.0	
Lost Time Adjust (s)		0.0	0.0						0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0						6.0	6.0	6.0	
Lead/Lag									Lag	Lead		
Lead-Lag Optimize?									Yes	Yes		
Recall Mode		None	None						Max	None	Max	
Act Effct Green (s)		38.0	38.0						52.8	12.2	71.0	
Actuated g/C Ratio		0.32	0.32						0.44	0.10	0.59	
v/c Ratio		1.00	0.26						0.89	0.65	0.28	
Control Delay		64.7	12.3						39.5	44.6	12.5	
Queue Delay		0.0	0.0						0.1	0.0	0.0	
Total Delay		64.7	12.3						39.6	44.6	12.5	
LOS		E	B						D	D	B	
Approach Delay		60.5									23.0	
Approach LOS		E									C	
Queue Length 50th (ft)		~447	23						420	73	102	
Queue Length 95th (ft)		#516	65						#586	114	134	
Internal Link Dist (ft)		473			265			504			365	
Turn Bay Length (ft)			200									
Base Capacity (vph)		1564	533						1254	507	1924	
Starvation Cap Reductn		0	0						4	0	0	
Spillback Cap Reductn		0	0						0	0	0	
Storage Cap Reductn		0	0						0	0	0	
Reduced v/c Ratio		1.00	0.26						0.89	0.52	0.28	

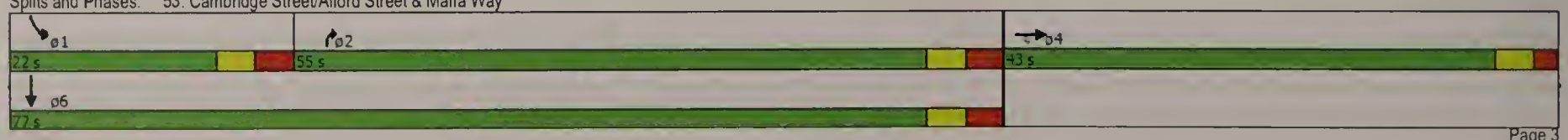
Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 45.8 — Intersection LOS: D
Intersection Capacity Utilization 81.7% — ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 53: Cambridge Street/Alford Street & Maffa Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1350	118	0	0	0	0	0	982	247	509	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1482						2760	3335	3252	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1482						2760	3335	3252	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	0	1570	137	0	0	0	0	0	1116	263	541	0
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	41	66	0	0
Lane Group Flow (vph)	0	1570	73	0	0	0	0	0	1075	197	541	0
Heavy Vehicles (%)	0%	5%	9%	2%	2%	2%	0%	0%	3%	5%	11%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		38.0	38.0						52.8	12.2	71.0	
Effective Green, g (s)		38.0	38.0						52.8	12.2	71.0	
Actuated g/C Ratio		0.32	0.32						0.44	0.10	0.59	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1564	469						1214	339	1924	
v/s Ratio Prot		c0.32							c0.39	c0.06	0.17	
v/s Ratio Perm			0.05									
v/c Ratio		1.00	0.16						0.89	0.58	0.28	
Uniform Delay, d1		41.0	29.5						30.8	51.5	12.0	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		23.7	0.2						9.7	2.5	0.4	
Delay (s)		64.7	29.6						40.5	54.0	12.4	
Level of Service		E	C						D	D	B	
Approach Delay (s)		61.9			0.0			40.5			26.0	
Approach LOS		E			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

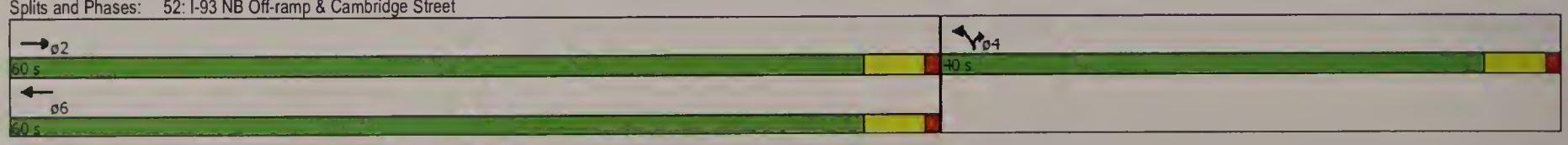
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Volume (vph)	670	0	0	552	336	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	1
Taper Length (ft)			50		50	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	3539	0	0	3539	1770	1583
Flt Permitted					0.950	
Satd. Flow (perm)	3539	0	0	3539	1770	1583
Right Turn on Red		Yes				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	704			584	536	
Travel Time (s)	16.0			13.3	12.2	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.84	0.84	0.90	0.90	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	798	0	0	613	357	399
Shared Lane Traffic (%)						
Lane Group Flow (vph)	798	0	0	613	357	399
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Detector Phase	2			6	4	4
Switch Phase						
Minimum Initial (s)	8.0			8.0	8.0	8.0
Minimum Split (s)	20.0			20.0	13.0	13.0
Total Split (s)	60.0			60.0	40.0	40.0
Total Split (%)	60.0%			60.0%	40.0%	40.0%
Yellow Time (s)	4.0			4.0	4.0	4.0
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	5.0			5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max			Max	None	None
Act Effct Green (s)	55.3			55.3	28.0	28.0
Actuated g/C Ratio	0.59			0.59	0.30	0.30
v/c Ratio	0.38			0.29	0.67	0.84
Control Delay	11.6			10.7	35.2	46.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	11.6			10.7	35.2	46.9
LOS	B			B	D	D
Approach Delay	11.6			10.7	41.4	
Approach LOS	B			B	D	
Queue Length 50th (ft)	125			90	183	219
Queue Length 95th (ft)	173			140	277	332
Internal Link Dist (ft)	624			504	456	
Turn Bay Length (ft)						
Base Capacity (vph)	2096			2096	667	597
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.38			0.29	0.54	0.67

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 93.3
Natural Cycle: 40
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 21.7 — Intersection LOS: C
Intersection Capacity Utilization 50.1% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 52: I-93 NB Off-ramp & Cambridge Street



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	670	0	0	552	336	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3539			3539	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3539			3539	1770	1583
Peak-hour factor, PHF	0.84	0.84	0.90	0.90	0.94	0.94
Adj. Flow (vph)	798	0	0	613	357	399
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	798	0	0	613	357	399
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%
Turn Type	NA			NA	NA	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.3			55.3	28.0	28.0
Effective Green, g (s)	55.3			55.3	28.0	28.0
Actuated g/C Ratio	0.59			0.59	0.30	0.30
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2097			2097	531	475
v/s Ratio Prot	c0.23			0.17	0.20	c0.25
v/s Ratio Perm						
v/c Ratio	0.38			0.29	0.67	0.84
Uniform Delay, d1	10.0			9.4	28.6	30.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.4	3.3	12.4
Delay (s)	10.5			9.7	32.0	42.9
Level of Service	B			A	C	D
Approach Delay (s)	10.5			9.7	37.7	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

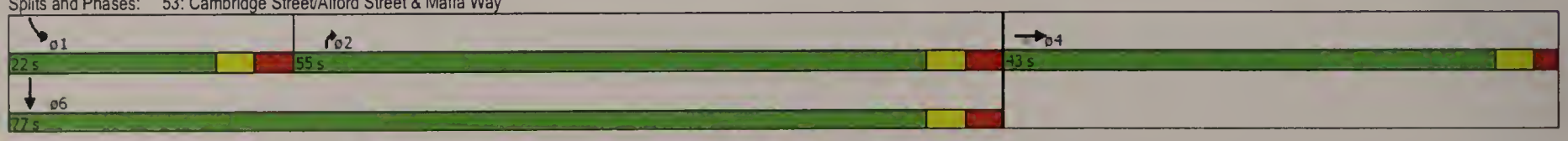
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	921	159	0	0	0	0	0	948	187	354	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		200	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		2	2		0
Taper Length (ft)	50			50			50			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected										0.950		
Satd. Flow (prot)	0	5085	1553	0	0	0	0	0	2760	3400	3438	0
Flt Permitted										0.950		
Satd. Flow (perm)	0	5085	1553	0	0	0	0	0	2760	3400	3438	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			187						81	73		
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		553			345			584			445	
Travel Time (s)		12.6			7.8			13.3			10.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	0%	0%	3%	3%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	1123	194	0	0	0	0	0	1030	210	398	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1123	194	0	0	0	0	0	1030	210	398	0
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Detector Phase		4	4						2	1	6	
Switch Phase												
Minimum Initial (s)		8.0	8.0						8.0	8.0	8.0	
Minimum Split (s)		27.0	27.0						14.0	14.0	28.0	
Total Split (s)		43.0	43.0						55.0	22.0	77.0	
Total Split (%)		35.8%	35.8%						45.8%	18.3%	64.2%	
Yellow Time (s)		3.0	3.0						3.0	3.0	3.0	
All-Red Time (s)		2.0	2.0						3.0	3.0	3.0	
Lost Time Adjust (s)		0.0	0.0						0.0	0.0	0.0	
Total Lost Time (s)		5.0	5.0						6.0	6.0	6.0	
Lead/Lag									Lag	Lead		
Lead-Lag Optimize?									Yes	Yes		
Recall Mode		None	None						Max	None	Max	
Act Effct Green (s)		33.0	33.0						54.7	10.4	71.1	
Actuated g/C Ratio		0.29	0.29						0.48	0.09	0.62	
v/c Ratio		0.77	0.34						0.76	0.56	0.19	
Control Delay		41.5	6.5						28.5	38.7	10.3	
Queue Delay		0.0	0.0						0.1	0.0	0.0	
Total Delay		41.5	6.5						28.6	38.7	10.3	
LOS		D	A						C	D	B	
Approach Delay		36.4									20.1	
Approach LOS		D									C	
Queue Length 50th (ft)		278	4						322	51	63	
Queue Length 95th (ft)		293	42						478	88	95	
Internal Link Dist (ft)		473			265			504			365	
Turn Bay Length (ft)			200									
Base Capacity (vph)		1681	638						1354	536	2124	
Starvation Cap Reductn		0	0						27	0	0	
Spillback Cap Reductn		0	0						0	0	0	
Storage Cap Reductn		0	0						0	0	0	
Reduced v/c Ratio		0.67	0.30						0.78	0.39	0.19	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 115.1
Natural Cycle: 75
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 30.3 — Intersection LOS: C
Intersection Capacity Utilization 71.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 53: Cambridge Street/Alford Street & Maffa Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	921	159	0	0	0	0	0	948	187	354	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5085	1553						2760	3400	3438	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5085	1553						2760	3400	3438	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	0	1123	194	0	0	0	0	0	1030	210	398	0
RTOR Reduction (vph)	0	0	133	0	0	0	0	0	43	66	0	0
Lane Group Flow (vph)	0	1123	61	0	0	0	0	0	987	144	398	0
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	0%	0%	3%	3%	5%	0%
Turn Type		NA	Perm						custom	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		33.0	33.0						54.7	10.4	71.1	
Effective Green, g (s)		33.0	33.0						54.7	10.4	71.1	
Actuated g/C Ratio		0.29	0.29						0.48	0.09	0.62	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1457	445						1311	307	2123	
v/s Ratio Prot		c0.22							c0.36	c0.04	0.12	
v/s Ratio Perm			0.04									
v/c Ratio		0.77	0.14						0.75	0.47	0.19	
Uniform Delay, d1		37.6	30.5						24.7	49.7	9.5	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		2.6	0.1						4.0	1.1	0.2	
Delay (s)		40.2	30.6						28.7	50.8	9.7	
Level of Service		D	C						C	D	A	
Approach Delay (s)		38.8			0.0			28.7			23.9	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	590	0	0	545	272	278
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3471	1736	1482
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3471	1736	1482
Peak-hour factor, PHF	0.78	0.78	0.84	0.84	0.81	0.81
Adj. Flow (vph)	756	0	0	649	336	343
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	756	0	0	649	336	343
Heavy Vehicles (%)	4%	0%	0%	4%	4%	9%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.3			55.3	25.8	25.8
Effective Green, g (s)	55.3			55.3	25.8	25.8
Actuated g/C Ratio	0.61			0.61	0.28	0.28
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2106			2106	491	419
v/s Ratio Prot	c0.22			0.19	0.19	c0.23
v/s Ratio Perm						
v/c Ratio	0.36			0.31	0.68	0.82
Uniform Delay, d1	9.0			8.7	29.0	30.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.4	3.9	11.8
Delay (s)	9.5			9.0	33.0	42.3
Level of Service	A			A	C	D
Approach Delay (s)	9.5			9.0	37.7	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	91.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1152	149	0	0	0	0	0	928	203	401	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frpb, ped/bikes		1.00	0.83						1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00						1.00	1.00	1.00	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1233						2760	3335	3252	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1233						2760	3335	3252	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	0	1340	173	0	0	0	0	0	1055	216	427	0
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	40	66	0	0
Lane Group Flow (vph)	0	1340	77	0	0	0	0	0	1015	150	427	0
Confl. Peds. (#/hr)			98									
Heavy Vehicles (%)	0%	5%	9%	2%	2%	2%	0%	0%	3%	5%	11%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		36.9	36.9						54.2	10.8	71.0	
Effective Green, g (s)		36.9	36.9						54.2	10.8	71.0	
Actuated g/C Ratio		0.31	0.31						0.46	0.09	0.60	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1533	382						1258	302	1941	
v/s Ratio Prot		c0.27							c0.37	c0.04	0.13	
v/s Ratio Perm			0.06									
v/c Ratio		0.87	0.20						0.81	0.50	0.22	
Uniform Delay, d1		38.8	30.2						27.8	51.5	11.1	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		5.9	0.3						5.6	1.3	0.3	
Delay (s)		44.7	30.4						33.5	52.7	11.4	
Level of Service		D	C						C	D	B	
Approach Delay (s)		43.0			0.0			33.5			25.3	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	118.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	222	188	182	181	246	324
Average Queue (ft)	119	60	78	70	136	141
95th Queue (ft)	189	147	155	146	221	252
Link Distance (ft)	671	671	486	486	492	492
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	484	409	322	108	368	380	182	165	209	156
Average Queue (ft)	347	290	177	51	226	224	108	43	98	34
95th Queue (ft)	460	387	282	94	327	332	166	131	174	106
Link Distance (ft)	479	479	479		486	486	422	422	422	422
Upstream Blk Time (%)	0									
Queuing Penalty (veh)	0									
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			2							
Queuing Penalty (veh)			2							

Network Summary

Network wide Queuing Penalty: 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↰	↱
Volume (vph)	670	0	0	552	336	375
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3539			3539	1770	1583
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3539			3539	1770	1583
Peak-hour factor, PHF	0.84	0.84	0.90	0.90	0.94	0.94
Adj. Flow (vph)	798	0	0	613	357	399
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	798	0	0	613	357	399
Heavy Vehicles (%)	2%	0%	0%	2%	2%	2%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.3			55.3	28.0	28.0
Effective Green, g (s)	55.3			55.3	28.0	28.0
Actuated g/C Ratio	0.59			0.59	0.30	0.30
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2097			2097	531	475
v/s Ratio Prot	c0.23			0.17	0.20	c0.25
v/s Ratio Perm						
v/c Ratio	0.38			0.29	0.67	0.84
Uniform Delay, d1	10.0			9.4	28.6	30.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.4	3.3	12.4
Delay (s)	10.5			9.7	32.0	42.9
Level of Service	B			A	C	D
Approach Delay (s)	10.5			9.7	37.7	
Approach LOS	B			A	D	

Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	93.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	921	159	0	0	0	0	0	948	187	354	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frpb, ped/bikes		1.00	0.94						1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00						1.00	1.00	1.00	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5085	1463						2760	3400	3438	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5085	1463						2760	3400	3438	
Peak-hour factor, PHF	0.82	0.82	0.82	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Adj. Flow (vph)	0	1123	194	0	0	0	0	0	1030	210	398	0
RTOR Reduction (vph)	0	0	133	0	0	0	0	0	41	66	0	0
Lane Group Flow (vph)	0	1123	61	0	0	0	0	0	989	144	398	0
Confl. Peds. (#/hr)			30									
Heavy Vehicles (%)	0%	2%	4%	2%	2%	2%	0%	0%	3%	3%	5%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		33.0	33.0						54.7	10.4	71.1	
Effective Green, g (s)		33.0	33.0						54.7	10.4	71.1	
Actuated g/C Ratio		0.29	0.29						0.48	0.09	0.62	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1457	419						1311	307	2123	
v/s Ratio Prot		c0.22							c0.36	c0.04	0.12	
v/s Ratio Perm			0.04									
v/c Ratio		0.77	0.14						0.75	0.47	0.19	
Uniform Delay, d1		37.6	30.5						24.7	49.7	9.5	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		2.6	0.2						4.1	1.1	0.2	
Delay (s)		40.2	30.7						28.8	50.8	9.7	
Level of Service		D	C						C	D	A	
Approach Delay (s)		38.8			0.0			28.8			23.9	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	115.1	Sum of lost time (s)	17.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	241	215	190	183	305	326
Average Queue (ft)	142	86	88	86	158	182
95th Queue (ft)	222	183	164	162	252	295
Link Distance (ft)	671	671	486	486	492	492
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	391	326	237	75	368	352	182	152	164	119
Average Queue (ft)	264	220	101	41	218	213	102	40	85	27
95th Queue (ft)	348	298	212	66	336	321	165	120	147	82
Link Distance (ft)	479	479	479		486	486	422	422	422	422
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			0							
Queuing Penalty (veh)			0							

Network Summary

Network wide Queuing Penalty: 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	651	0	0	552	316	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3471			3438	1787	1495
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3471			3438	1787	1495
Peak-hour factor, PHF	0.82	0.82	0.86	0.86	0.93	0.93
Adj. Flow (vph)	794	0	0	642	340	341
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	794	0	0	642	340	341
Heavy Vehicles (%)	4%	0%	0%	5%	1%	8%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.3			55.3	25.5	25.5
Effective Green, g (s)	55.3			55.3	25.5	25.5
Actuated g/C Ratio	0.61			0.61	0.28	0.28
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	2113			2093	501	419
v/s Ratio Prot	c0.23			0.19	0.19	c0.23
v/s Ratio Perm						
v/c Ratio	0.38			0.31	0.68	0.81
Uniform Delay, d1	9.0			8.5	29.0	30.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.5			0.4	3.6	11.5
Delay (s)	9.5			8.9	32.7	41.9
Level of Service	A			A	C	D
Approach Delay (s)	9.5			8.9	37.3	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1170	160	0	0	0	0	0	993	183	436	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		4940	1495						2733	3019	3223	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		4940	1495						2733	3019	3223	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84
Adj. Flow (vph)	0	1360	186	0	0	0	0	0	1128	218	519	0
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1360	84	0	0	0	0	0	1128	218	519	0
Heavy Vehicles (%)	0%	5%	8%	2%	2%	2%	0%	0%	4%	16%	12%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		37.2	37.2						51.6	13.5	71.1	
Effective Green, g (s)		37.2	37.2						51.6	13.5	71.1	
Actuated g/C Ratio		0.31	0.31						0.43	0.11	0.60	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1540	466						1182	341	1920	
v/s Ratio Prot		c0.28							c0.41	c0.07	0.16	
v/s Ratio Perm			0.06									
v/c Ratio		0.88	0.18						0.95	0.64	0.27	
Uniform Delay, d1		39.0	29.9						32.7	50.6	11.6	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		6.4	0.2						17.3	3.9	0.3	
Delay (s)		45.4	30.1						50.0	54.5	12.0	
Level of Service		D	C						D	D	B	
Approach Delay (s)		43.5			0.0			50.0			24.5	
Approach LOS		D			A			D			C	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	119.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	903	47	16	539	41	10	2	89	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.82	0.82	0.82	0.50	0.50	0.50
Hourly flow rate (vph)	21	1062	55	18	606	46	12	2	109	2	0	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.93			0.89			0.92	0.92	0.89	0.92	0.92	0.93
vC, conflicting volume	652			1118			1477	1820	559	1348	1825	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	485			874			1017	1390	243	876	1395	136
tC, single (s)	5.3			4.5			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			92	98	84	99	100	99
cM capacity (veh/h)	714			592			147	124	676	179	123	835

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	552	586	321	349	123	8
Volume Left	21	0	18	0	12	2
Volume Right	0	55	0	46	109	6
cSH	714	1700	592	1700	468	435
Volume to Capacity	0.03	0.34	0.03	0.21	0.26	0.02
Queue Length 95th (ft)	2	0	2	0	26	1
Control Delay (s)	0.8	0.0	1.0	0.0	15.4	13.4
Lane LOS	A		A		C	B
Approach Delay (s)	0.4		0.5		15.4	13.4
Approach LOS					C	B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	208	165	200	182	241	291
Average Queue (ft)	125	75	83	81	145	161
95th Queue (ft)	197	150	167	157	227	264
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0		
Queuing Penalty (veh)			0	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	451	393	321	188	244	255	218	193	207	174
Average Queue (ft)	318	274	184	51	205	208	116	59	99	51
95th Queue (ft)	414	375	275	112	259	261	198	164	177	133
Link Distance (ft)	557	557	557		203	203	437	437	437	437
Upstream Blk Time (%)					11	11				
Queuing Penalty (veh)					53	57				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			1							
Queuing Penalty (veh)			2							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	179	161	120	94	103	14
Average Queue (ft)	50	37	20	6	45	2
95th Queue (ft)	133	121	81	46	79	9
Link Distance (ft)	218	218	203	203	275	182
Upstream Blk Time (%)	0	0				
Queuing Penalty (veh)	0	0				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 112

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	472	0	0	486	263	443
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frt	1.00			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3505			3539	1770	1538
Flt Permitted	1.00			1.00	0.95	1.00
Satd. Flow (perm)	3505			3539	1770	1538
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.91	0.91
Adj. Flow (vph)	508	0	0	512	289	487
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	508	0	0	512	289	487
Heavy Vehicles (%)	3%	0%	0%	2%	2%	5%
Turn Type	NA			NA	Prot	Prot
Protected Phases	2			6	4	4
Permitted Phases						
Actuated Green, G (s)	55.1			55.1	33.3	33.3
Effective Green, g (s)	55.1			55.1	33.3	33.3
Actuated g/C Ratio	0.56			0.56	0.34	0.34
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1962			1981	598	520
v/s Ratio Prot	c0.14			0.14	0.16	c0.32
v/s Ratio Perm						
v/c Ratio	0.26			0.26	0.48	0.94
Uniform Delay, d1	11.1			11.1	25.7	31.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.3			0.3	0.6	24.4
Delay (s)	11.5			11.5	26.4	56.0
Level of Service	B			B	C	E
Approach Delay (s)	11.5			11.5	44.9	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	98.4	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1018	146	0	0	0	0	0	882	203	348	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0						6.0	6.0	6.0	
Lane Util. Factor		0.91	1.00						0.88	0.97	0.95	
Frt		1.00	0.85						0.85	1.00	1.00	
Flt Protected		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (prot)		5036	1524						2733	3367	3471	
Flt Permitted		1.00	1.00						1.00	0.95	1.00	
Satd. Flow (perm)		5036	1524						2733	3367	3471	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	0.88	0.88	0.88
Adj. Flow (vph)	0	1119	160	0	0	0	0	0	969	231	395	0
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1119	50	0	0	0	0	0	969	231	395	0
Heavy Vehicles (%)	0%	3%	6%	2%	2%	2%	0%	0%	4%	4%	4%	0%
Turn Type		NA	Perm						Prot	Prot	NA	
Protected Phases		4							2	1	6	
Permitted Phases			4									
Actuated Green, G (s)		32.7	32.7						52.2	12.9	71.1	
Effective Green, g (s)		32.7	32.7						52.2	12.9	71.1	
Actuated g/C Ratio		0.28	0.28						0.45	0.11	0.62	
Clearance Time (s)		5.0	5.0						6.0	6.0	6.0	
Vehicle Extension (s)		3.0	3.0						3.0	3.0	3.0	
Lane Grp Cap (vph)		1434	434						1242	378	2149	
v/s Ratio Prot		c0.22							c0.35	c0.07	0.11	
v/s Ratio Perm			0.03									
v/c Ratio		0.78	0.11						0.78	0.61	0.18	
Uniform Delay, d1		37.7	30.4						26.5	48.6	9.4	
Progression Factor		1.00	1.00						1.00	1.00	1.00	
Incremental Delay, d2		2.8	0.1						4.9	2.9	0.2	
Delay (s)		40.6	30.5						31.4	51.5	9.6	
Level of Service		D	C						C	D	A	
Approach Delay (s)		39.3			0.0			31.4			25.0	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	114.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	862	29	1	482	11	4	0	19	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.99	0.99	0.99	0.95	0.95	0.95	0.70	0.70	0.70	0.25	0.25	0.25
Hourly flow rate (vph)	24	871	29	1	507	12	6	0	27	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		255			329							
pX, platoon unblocked	0.96			0.93			0.95	0.95	0.93	0.95	0.95	0.96
vC, conflicting volume	519			900			1190	1455	450	1026	1464	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	420			749			917	1196	267	746	1205	150
tC, single (s)	5.2			4.1			8.0	6.5	7.1	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.8			2.2			3.8	4.0	3.4	3.5	4.0	3.3
p0 queue free %	97			100			97	100	96	99	100	100
cM capacity (veh/h)	798			811			180	173	660	272	171	842

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	460	465	255	265	33	4
Volume Left	24	0	1	0	6	4
Volume Right	0	29	0	12	27	0
cSH	798	1700	811	1700	451	272
Volume to Capacity	0.03	0.27	0.00	0.16	0.07	0.01
Queue Length 95th (ft)	2	0	0	0	6	1
Control Delay (s)	0.9	0.0	0.1	0.0	13.6	18.4
Lane LOS	A		A		B	C
Approach Delay (s)	0.4		0.0		13.6	18.4
Approach LOS					B	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 52: I-93 NB Off-ramp & Cambridge Street

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	T	T	T	L	R
Maximum Queue (ft)	207	152	177	180	352	458
Average Queue (ft)	102	46	78	76	130	255
95th Queue (ft)	172	116	153	149	258	416
Link Distance (ft)	671	671	218	218	492	492
Upstream Blk Time (%)			0	0	0	1
Queuing Penalty (veh)			0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 53: Cambridge Street/Alford Street & Maffa Way

Movement	EB	EB	EB	EB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	T	R	R	R	L	L	T	T
Maximum Queue (ft)	374	350	249	92	244	248	205	188	178	146
Average Queue (ft)	268	233	147	41	184	184	115	51	85	29
95th Queue (ft)	349	319	232	72	251	258	184	148	150	98
Link Distance (ft)	556	556	556		203	203	421	421	421	421
Upstream Blk Time (%)					7	7				
Queuing Penalty (veh)					31	32				
Storage Bay Dist (ft)				200						
Storage Blk Time (%)			0							
Queuing Penalty (veh)			0							

Intersection: 58: Cambridge Street

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (ft)	130	119	17	24	63	12
Average Queue (ft)	29	16	1	1	18	1
95th Queue (ft)	91	71	18	13	49	6
Link Distance (ft)	218	218	203	203	164	182
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Zone Summary

Zone wide Queuing Penalty: 64

Table 1 – Capacity Analysis Summary & Comparison, FRIDAY p.m. Peak Hour, Sullivan Square, Boston

Intersection	Submitted FEIR Existing (2013) Conditions						Revised FEIR Existing (2013) Conditions						SFEIR Existing (2013) Conditions					
	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage
52. (S) Cambridge Street/I-93 NB off-Ramp/Sullivan Station	**D**	**35.6**					**B**	**18.5**					**B**	**18.3**				
Cambridge Street EB thru | thru	B	14.7	0.49	181	189	590	A	9.5	0.36	119	189	59	A	9.5	0.38	125	197	590
Cambridge Street WB thru | thru	B	13.3	0.38	128	154	475	A	9	0.31	78	155	475	A	8.9	0.31	83	167	475
I-93 NB ramp NB left	C	32.8	0.73	244	310	>800	C	33	0.68	136	221	>800	C	32.7	0.68	145	227	>800
I-93 NB ramp NB right	F	100.3	1.09	~410	#521	>800	D	42.3	0.82	141	252	>800	D	41.9	0.81	161	264	>800
53. Sullivan Square																		
53a. (S) Main Street/Maffa Way/Cambridge Street/Alford Street	**D**	**47.3**					**D**	**36.3**					**D**	**41.6**				
Maffa EB thru | thru | thru	E	64.7	1.00	~447	#516	>800	D	44.7	0.87	347	460	>800	D	45.4	0.88	318	414	>800
Maffa EB right	C	29.6	0.16	23	65	195	C	30.4	0.2	51	94	195	C	30.1	0.18	51	112	195
Cambridge NB right | right	D	40.5	0.89	420	#586	485	C	33.5	0.81	226	332	485	D	50.0	0.95	208	261	485
Alford SB left | left	D	54	0.58	73	114	330	D	52.7	0.5	108	166	330	D	54.5	0.64	116	198	330
Alford SB thru | thru	B	12.4	0.28	102	134	330	B	11.4	0.22	98	174	330	B	12.0	0.27	99	177	330

*based on counts provided by City of Boston dated 2008. *based on counts conducted in May/June 2013. *based on counts conducted in December 2014.

Table 2 – Capacity Analysis Summary & Comparison, SATURDAY Afternoon Peak Hour, Sullivan Square, Boston

Intersection	FEIR Existing (2013) Conditions						Revised FEIR Existing (2013) Conditions						SFEIR Existing (2013) Conditions					
	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage	LOS	Delay	V/C Ratio	50% Queue Length[1]	95% Queue Length[1]	Available Storage
52. (S) Cambridge Street/I-93 NB off-Ramp/Sullivan Station	**B**	**19.8**					**B**	**19.8**					**C**	**25.9**				
Cambridge Street EB thru | thru	B	10.5	0.38	125	173	590	B	10.5	0.38	142	222	59	B	11.5	0.26	102	172	590
Cambridge Street WB thru | thru	A	9.7	0.29	90	140	475	A	9.7	0.29	88	164	475	B	11.5	0.26	78	153	475
I-93 NB ramp NB left	C	32	0.67	183	277	>800	C	32	0.67	158	252	>800	C	26.4	0.48	130	258	>800
I-93 NB ramp NB right	D	42.9	0.84	219	332	>800	D	42.9	0.84	182	295	>800	E	56.0	0.94	255	416	>800
53. Sullivan Square																		
53a. (S) Main Street/Maffa Way/Cambridge Street/Alford Street	**C**	**32.2**					**C**	**32.2**					**C**	**33.5**				
Maffa EB thru | thru | thru	D	40.2	0.77	278	293	>800	D	40.2	0.77	264	348	>800	D	40.6	0.78	268	349	>800
Maffa EB right	C	30.6	0.14	4	42	195	C	30.7	0.14	41	66	195	C	30.5	0.11	41	72	195
Cambridge NB right | right	C	28.7	0.75	322	478	485	C	28.8	0.75	218	336	485	C	31.4	0.78	184	258	485
Alford SB left | left	D	50.8	0.47	51	88	345	D	50.8	0.47	102	165	330	D	51.5	0.61	115	184	345
Alford SB thru | thru	A	9.7	0.19	63	95	345	A	9.7	0.19	85	147	330	A	9.6	0.18	85	150	345

*based on counts provided by City of Boston dated 2008. *based on counts conducted in May/June 2013. *based on counts conducted in December 2014.

HCS Merge Analysis

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2013 Existing a.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2013

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	155	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	513	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	155	513		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	40	136		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	164	557	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 164 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	721	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 164 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	721	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 9.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 47.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2013 Existing p.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2013

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	477	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1084	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	477	1084		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	123	288		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	504	1176	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 504 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1680	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 504 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1680	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.328	
Space mean speed in ramp influence area,	S_R = 47.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.4	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2013 Existing Sat Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2013
Description:	Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	317	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	787	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	317	787		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	82	209		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	335	854	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 335 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1189	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 335 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1189	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.320	
Space mean speed in ramp influence area,	S_R = 47.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 No Build a.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023
Description:	Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	160	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	665	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	160	665		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	41	177		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	169	722	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 169 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	891	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 169 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	891	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 10.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.317	
Space mean speed in ramp influence area,	S_R = 47.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S_O = 47.5	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 No Build p.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	501	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1325	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	501	1325		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	129	352		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	529	1438	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 529 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1967	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 529 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1967	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.335	
Space mean speed in ramp influence area,	S_R = 47.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 No Build Sat Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	331	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	931	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	331	931		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	85	248		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	350	1010	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 350 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1360	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 350 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1360	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 14.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.322	
Space mean speed in ramp influence area,	S_R = 47.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 Build a.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	185	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	744	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	185	744		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	48	198		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	195	807	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 195 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1002	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 195 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1002	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 11.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.318	
Space mean speed in ramp influence area,	S_R = 47.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.65

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 Build p.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023
Description:	Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	603	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1652	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	603	1652		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	155	439		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	637	1793	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 637 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2430	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 637 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2430	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.351	
Space mean speed in ramp influence area,	S_R = 47.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.2	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 Build Real p.m. Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023

Description: Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	559	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1512	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	559	1512		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	144	402		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	591	1641	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 591 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2232	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 591 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2232	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.344	
Space mean speed in ramp influence area,	S_R = 47.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.3	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	JDH
Agency/Co.:	Howard Stein Hudson
Date performed:	5/5/2015
Analysis time period:	2023 Build Sat Peak Hour
Freeway/Dir of Travel:	Rutherford Avenue
Junction:	Alford Street
Jurisdiction:	Boston
Analysis Year:	2023
Description:	Sullivan Square - Wynn Resort_SSFEIR

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	50.0	mph
Volume on freeway	453	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	30.0	mph
Volume on ramp	1321	vph
Length of first accel/decel lane	230	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	453	1321		vph
Peak-hour factor, PHF	0.97	0.94		
Peak 15-min volume, v15	117	351		v
Trucks and buses	5	4		%
Recreational vehicles	0	0		%
Terrain type:	Level	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5		
Recreational vehicle PCE, ER	1.2	1.2		

Heavy vehicle adjustment, fHV	0.976	0.980	
Driver population factor, fP	1.00	1.00	
Flow rate, vp	479	1433	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 479 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1912	1112014848	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 479 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1912	1112014848	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.334	
Space mean speed in ramp influence area,	S_R = 47.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 47.3	mph

Comparison Between Existing Conditions Analysis (2008, 2013, 2014)

Appendix E

Route 16, Medford

Appendix E

Route 16, Medford

E1. Synchro Output

a. Existing (2013) Conditions

b. No Build (2023) Conditions

c. Build (2023) Conditions

d. Build (2023) Mitigated Conditions

Synchro Output

Existing (2013) Conditions

HCM Signalized Intersection Capacity Analysis
38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

11/21/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	504	93	389	469	403	84	413	255	167	209	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3529	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3895		1697	1900	1662	1678	3277		1745	3529	
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	48	548	101	418	504	433	90	444	274	182	227	28
RTOR Reduction (vph)	0	11	0	0	0	283	0	79	0	0	8	0
Lane Group Flow (vph)	0	686	0	418	504	150	90	639	0	182	247	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	9.5	24.0		10.0	24.5	
Effective Green, g (s)		30.0		35.0	35.0	35.0	9.5	24.0		10.0	24.5	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.08	0.20		0.08	0.20	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		973		494	554	484	132	655		145	720	
v/s Ratio Prot		c0.18		0.25	c0.27		0.05	c0.19		c0.10	0.07	
v/s Ratio Perm						0.09						
v/c Ratio		0.70		0.85	0.91	0.31	0.68	0.98		1.26	0.34	
Uniform Delay, d1		41.0		40.0	41.0	33.1	53.8	47.7		55.0	40.9	
Progression Factor		1.00		0.91	0.91	1.45	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3		11.5	17.4	0.3	13.6	29.6		158.9	1.3	
Delay (s)		43.3		47.9	54.8	48.3	67.3	77.3		213.9	42.2	
Level of Service		D		D	D	D	E	E		F	D	
Approach Delay (s)		43.3			50.6			76.2			113.7	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	63.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	924	895	0	1143	367
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.94	0.94	0.96	0.96	0.95	0.95
Adj. Flow (vph)	0	983	932	0	1203	386
RTOR Reduction (vph)	0	0	0	0	0	90
Lane Group Flow (vph)	0	983	932	0	1203	296
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2246	2224		1115	519
v/s Ratio Prot		c0.26	0.24		c0.35	0.19
v/s Ratio Perm						
v/c Ratio		0.44	0.42		1.08	0.57
Uniform Delay, d1		14.0	13.8		40.5	33.6
Progression Factor		0.90	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.1		50.9	1.5
Delay (s)		12.7	13.9		91.4	35.1
Level of Service		B	B		F	D
Approach Delay (s)		12.7	13.9		77.7	
Approach LOS		B	B		E	

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1651	149	94	986	1391	513	426	68	134	285	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.99			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7208			4789	3421	3286	4849			4873	1316
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7208			4789	3421	3286	4849			4873	1316
Peak-hour factor, PHF	0.96	0.96	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1720	155	97	1016	1434	558	463	74	146	310	88
RTOR Reduction (vph)	14	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	1861	0	0	1113	1434	558	515	0	0	465	79
Heavy Vehicles (%)	2%	1%	0%	3%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1946			1245	1984	427	630			682	184
v/s Ratio Prot	c0.26			c0.23	0.42	c0.17	0.11			c0.10	0.06
v/s Ratio Perm											
v/c Ratio	0.96			0.89	0.72	1.31	0.82			0.68	0.43
Uniform Delay, d1	35.9			35.7	15.2	43.5	42.3			40.9	39.3
Progression Factor	1.00			1.70	0.80	1.00	1.00			0.22	0.19
Incremental Delay, d2	12.4			7.1	1.6	154.1	11.3			4.7	6.2
Delay (s)	48.3			67.8	13.7	197.6	53.6			13.7	13.7
Level of Service	D			E	B	F	D			B	B
Approach Delay (s)	48.3				37.3		127.0			13.7	
Approach LOS	D				D		F			B	

Intersection Summary			
HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	70	245	2093	2068	470	64	400	912	549	1083
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3479	6408	7471	1615		1610	3383	1599	2733
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3479	6408	7471	1615		1610	3383	1599	2733
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.97	0.97	0.97	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	74	258	2203	2132	485	66	435	991	597	1177
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	336	2203	2132	505	0	391	1035	597	1167
Heavy Vehicles (%)	0%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			487	2178	2988	646		499	1048	495	1530
v/s Ratio Prot			0.10	c0.34	0.29	c0.31		0.24	0.31	c0.37	c0.43
v/s Ratio Perm											
v/c Ratio			0.69	1.01	0.71	0.78		0.78	0.99	1.21	0.76
Uniform Delay, d1			40.9	33.0	25.2	26.2		31.4	34.3	34.5	16.9
Progression Factor			1.12	0.50	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			0.7	8.9	1.5	9.2		11.7	25.0	110.6	3.7
Delay (s)			46.5	25.6	26.7	35.4		43.1	59.3	145.1	20.6
Level of Service			D	C	C	D		D	E	F	C
Approach Delay (s)				28.4	28.5				59.1		
Approach LOS				C	C				E		

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1452	0	0	0	0	0	0	0	0	500	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6304	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6304	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1512	0	0	0	0	0	0	0	0	543	168
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	46	0
Lane Group Flow (vph)	0	1512	0	0	0	0	0	0	0	0	665	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1323	
v/s Ratio Prot		c0.29									c0.11	
v/s Ratio Perm												
v/c Ratio		0.43									0.50	
Uniform Delay, d1		6.8									34.9	
Progression Factor		0.86									1.00	
Incremental Delay, d2		0.1									1.4	
Delay (s)		6.0									36.3	
Level of Service		A									D	
Approach Delay (s)		6.0			0.0			0.0			36.3	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	342	284	200	295	194	124	357	395	160	684	643
Average Queue (ft)	220	170	194	274	78	90	219	225	154	459	405
95th Queue (ft)	308	264	232	286	147	152	351	382	182	856	797
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				21	0						
Queuing Penalty (veh)				132	1						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			26	32		13	53		81	2	
Queuing Penalty (veh)			121	126		27	45		84	3	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	177	175	786	779	420	424	364
Average Queue (ft)	111	120	720	692	387	383	235
95th Queue (ft)	155	166	913	987	433	433	342
Link Distance (ft)	263	263	741	741	395	395	395
Upstream Blk Time (%)			72	46	6	5	0
Queuing Penalty (veh)			0	0	32	25	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	846	870	400	367	333	181	182	173	149	156	250	671
Average Queue (ft)	707	834	400	365	263	172	165	161	78	92	148	640
95th Queue (ft)	1134	854	402	376	334	181	177	169	148	156	340	654
Link Distance (ft)	812	812				153	153	153	153	153		623
Upstream Blk Time (%)	8	64				67	65	65	0	1		99
Queuing Penalty (veh)	0	0				330	322	323	2	3		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		3	38	32	0							94
Queuing Penalty (veh)		31	126	104	1							242

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	657	622	98	168	172	138	32
Average Queue (ft)	621	249	11	88	63	15	1
95th Queue (ft)	759	651	60	158	157	66	22
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	63	0		0	0	0	0
Queuing Penalty (veh)	0	0		0	0	0	0
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	156	137	105	101	103	146	400	450	779	781	745	550
Average Queue (ft)	79	56	58	56	59	69	383	449	738	734	625	283
95th Queue (ft)	134	112	93	93	92	111	431	452	806	833	850	511
Link Distance (ft)	153	153	153	153	153	153			727	727	727	
Upstream Blk Time (%)	0	0			0	0			65	52	4	
Queuing Penalty (veh)	2	0			0	0			0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							6	76	92		3	2
Queuing Penalty (veh)							26	315	759		15	9

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>	>
Maximum Queue (ft)	499	548	539	260	242	60
Average Queue (ft)	448	534	438	49	15	4
95th Queue (ft)	567	547	756	300	135	44
Link Distance (ft)	538	538	538	538	538	
Upstream Blk Time (%)	29	99	61	4	0	
Queuing Penalty (veh)	0	0	0	0	0	
Storage Bay Dist (ft)						100
Storage Blk Time (%)					1	
Queuing Penalty (veh)					7	

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	L	LR	T	T	T
Maximum Queue (ft)	265	212	107	52	70	135	137
Average Queue (ft)	169	98	38	4	4	55	69
95th Queue (ft)	249	206	81	25	33	112	129
Link Distance (ft)	383	383	383	383	141	141	141
Upstream Blk Time (%)						0	0
Queuing Penalty (veh)						0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3212

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	395	137	383	477	353	59	196	155	140	192	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96		1.00	1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3932		1728	1900	1652	1652	3199		1745	3493	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3932		1728	1900	1652	1652	3199		1745	3493	
Peak-hour factor, PHF	0.93	0.93	0.93	0.94	0.94	0.94	0.96	0.96	0.96	0.76	0.76	0.76
Adj. Flow (vph)	27	425	147	407	507	376	61	204	161	184	253	28
RTOR Reduction (vph)	0	26	0	0	0	245	0	121	0	0	7	0
Lane Group Flow (vph)	0	573	0	407	507	131	61	244	0	184	274	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	2%	1%	3%	0%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		29.9		35.1	35.1	35.1	7.6	24.0		10.0	26.4	
Effective Green, g (s)		29.9		35.1	35.1	35.1	7.6	24.0		10.0	26.4	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.06	0.20		0.08	0.22	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		979		505	555	483	104	639		145	768	
v/s Ratio Prot		c0.15		0.24	c0.27		0.04	0.08		c0.11	c0.08	
v/s Ratio Perm						0.08						
v/c Ratio		0.59		0.81	0.91	0.27	0.59	0.38		1.27	0.36	
Uniform Delay, d1		39.6		39.3	41.0	32.6	54.7	41.6		55.0	39.6	
Progression Factor		1.00		0.89	0.89	1.30	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9		8.0	17.5	0.3	8.2	1.7		164.2	1.3	
Delay (s)		40.5		42.7	53.9	42.7	62.9	43.3		219.2	40.9	
Level of Service		D		D	D	D	E	D		F	D	
Approach Delay (s)		40.5			47.1			46.1			111.5	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	693	905	0	950	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3813	3813		3467	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3813	3813		3467	1615
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.88	0.88
Adj. Flow (vph)	0	815	1065	0	1080	381
RTOR Reduction (vph)	0	0	0	0	0	65
Lane Group Flow (vph)	0	815	1065	0	1080	316
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2224	2224		1126	524
v/s Ratio Prot		0.21	c0.28		c0.31	0.20
v/s Ratio Perm						
v/c Ratio		0.37	0.48		0.96	0.60
Uniform Delay, d1		13.2	14.5		39.7	34.0
Progression Factor		0.99	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		17.6	2.0
Delay (s)		13.2	14.6		57.3	35.9
Level of Service		B	B		E	D
Approach Delay (s)		13.2	14.6		51.8	
Approach LOS		B	B		D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1055	248	74	1206	1204	426	508	99	133	340	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.97			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7154			4829	3421	3351	4884			4921	1329
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7154			4829	3421	3351	4884			4921	1329
Peak-hour factor, PHF	0.97	0.97	0.96	0.96	0.96	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1088	256	77	1256	1254	453	540	105	141	362	112
RTOR Reduction (vph)	7	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	1337	0	0	1333	1254	453	616	0	0	514	101
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	0%	1%	0%	0%	1%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1931			1255	1984	435	634			688	186
v/s Ratio Prot	c0.19			c0.28	0.37	c0.14	0.13			c0.10	0.08
v/s Ratio Perm											
v/c Ratio	0.69			1.06	0.63	1.04	0.97			0.75	0.54
Uniform Delay, d1	32.8			37.0	13.9	43.5	43.3			41.3	40.0
Progression Factor	1.00			1.74	0.63	1.00	1.00			0.22	0.20
Incremental Delay, d2	2.1			39.5	1.0	54.3	29.5			5.8	8.6
Delay (s)	34.8			103.9	9.8	97.8	72.8			14.8	16.7
Level of Service	C			F	A	F	E			B	B
Approach Delay (s)	34.8				58.3		83.1			15.1	
Approach LOS	C				E		F			B	

Intersection Summary			
HCM 2000 Control Delay	52.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	10	49	219	1453	2183	399	97	280	403	389	993
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (prot)			3441	6536	7695	1615		1610	3427	1615	2787
Flt Permitted			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (perm)			3441	6536	7695	1615		1610	3427	1615	2787
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.93	0.93	0.93	0.89	0.89	0.89	0.89
Adj. Flow (vph)	10	51	228	1514	2347	429	104	315	453	437	1116
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	289	1514	2347	487	0	249	519	437	1106
Heavy Vehicles (%)	0%	10%	0%	0%	0%	0%	0%	2%	0%	0%	2%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			481	2222	3078	646		499	1062	500	1560
v/s Ratio Prot			0.08	0.23	c0.31	0.30		0.15	0.15	c0.27	c0.40
v/s Ratio Perm											
v/c Ratio			0.60	0.68	0.76	0.75		0.50	0.49	0.87	0.71
Uniform Delay, d1			40.4	28.3	25.9	25.8		28.2	28.1	32.7	16.1
Progression Factor			1.11	0.58	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			3.3	1.0	1.8	8.0		3.5	1.6	18.8	2.8
Delay (s)			48.0	17.5	27.7	33.8		31.7	29.7	51.4	18.8
Level of Service			D	B	C	C		C	C	D	B
Approach Delay (s)				22.4	28.9				28.8		
Approach LOS				C	C				C		

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	851	0	0	0	0	0	0	0	0	578	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6232	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6232	
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	868	0	0	0	0	0	0	0	0	628	225
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	65	0
Lane Group Flow (vph)	0	868	0	0	0	0	0	0	0	0	788	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Parking (#/hr)			0									
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1308	
v/s Ratio Prot		c0.17									c0.13	
v/s Ratio Perm												
v/c Ratio		0.24									0.60	
Uniform Delay, d1		5.8									35.7	
Progression Factor		1.07									1.00	
Incremental Delay, d2		0.1									2.1	
Delay (s)		6.3									37.8	
Level of Service		A									D	
Approach Delay (s)		6.3			0.0			0.0			37.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	282	243	200	296	188	116	178	190	158	336	295
Average Queue (ft)	169	121	194	274	70	54	92	73	120	164	125
95th Queue (ft)	247	218	231	285	146	107	150	156	171	373	314
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				21							
Queuing Penalty (veh)				129							
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			22	35		3	19		33	4	
Queuing Penalty (veh)			104	135		3	11		32	6	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	138	152	428	406	339	335	336
Average Queue (ft)	82	95	403	354	265	256	216
95th Queue (ft)	129	139	416	513	334	326	320
Link Distance (ft)	263	263	386	386	395	395	395
Upstream Blk Time (%)			86	19			0
Queuing Penalty (veh)			0	0			1
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	836	855	400	367	333	176	179	172	109	117	250	650
Average Queue (ft)	499	756	395	347	228	171	164	159	34	48	165	638
95th Queue (ft)	1079	1002	434	407	333	180	175	166	86	94	348	644
Link Distance (ft)	812	812				153	153	153	153	153		623
Upstream Blk Time (%)	5	48				67	65	65	0	0		98
Queuing Penalty (veh)	0	0				332	323	324	0	0		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		3	22	12	0							95
Queuing Penalty (veh)		29	47	26	0							202

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	638	628	152	175	176	145	25
Average Queue (ft)	634	321	35	107	80	36	1
95th Queue (ft)	645	723	115	170	170	116	14
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	67	0		1	0	0	
Queuing Penalty (veh)	0	0		1	0	0	
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	162	143	99	107	187	104	400	450	1209	1208	1208	400
Average Queue (ft)	84	62	59	53	59	64	391	449	1206	1206	1169	134
95th Queue (ft)	140	119	92	91	125	94	415	450	1249	1261	1389	270
Link Distance (ft)	153	153	153	153	153	153			1193	1193	1193	
Upstream Blk Time (%)	1	0		0					88	64	14	
Queuing Penalty (veh)	2	0		0					0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							6	88	96		0	
Queuing Penalty (veh)							25	382	839		1	

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>	>
Maximum Queue (ft)	508	542	314	284	317	60
Average Queue (ft)	504	537	311	117	17	2
95th Queue (ft)	580	551	731	482	163	30
Link Distance (ft)	538	538	538	538	538	
Upstream Blk Time (%)	60	99	39	20	1	
Queuing Penalty (veh)	0	0	0	0	0	
Storage Bay Dist (ft)						100
Storage Blk Time (%)					2	
Queuing Penalty (veh)					9	

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	29	92	104	301	247	150	37
Average Queue (ft)	1	33	49	209	135	58	4
95th Queue (ft)	17	78	92	298	239	117	22
Link Distance (ft)	150	150	150	293	293	293	293
Upstream Blk Time (%)				1			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 2964

No Build (2023) Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	534	98	409	493	445	88	434	268	184	232	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3533	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3895		1697	1900	1662	1678	3277		1745	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	580	107	445	536	484	96	472	291	200	252	29
RTOR Reduction (vph)	0	11	0	0	0	298	0	78	0	0	7	0
Lane Group Flow (vph)	0	726	0	445	536	186	96	685	0	200	274	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Effective Green, g (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.08	0.20		0.08	0.20	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		973		494	554	484	134	655		145	718	
v/s Ratio Prot		c0.19		0.26	c0.28		0.06	c0.21		c0.11	0.08	
v/s Ratio Perm						0.11						
v/c Ratio		0.75		0.90	0.97	0.38	0.72	1.05		1.38	0.38	
Uniform Delay, d1		41.5		40.8	41.9	33.9	53.9	48.0		55.0	41.3	
Progression Factor		1.00		0.91	0.91	1.25	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1		17.1	27.1	0.4	16.6	47.5		207.8	1.5	
Delay (s)		44.6		54.3	65.3	42.8	70.5	95.5		262.8	42.8	
Level of Service		D		D	E	D	E	F		F	D	
Approach Delay (s)		44.6			54.5			92.7			134.3	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	72.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↖↖	↱
Volume (vph)	0	995	966	0	1303	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1082	1050	0	1416	420
RTOR Reduction (vph)	0	0	0	0	0	68
Lane Group Flow (vph)	0	1082	1050	0	1416	353
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2246	2224		1115	519
v/s Ratio Prot		c0.28	0.28		c0.41	0.22
v/s Ratio Perm						
v/c Ratio		0.48	0.47		1.27	0.68
Uniform Delay, d1		14.5	14.4		40.5	35.1
Progression Factor		0.96	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		128.7	3.5
Delay (s)		13.9	14.5		169.2	38.6
Level of Service		B	B		F	D
Approach Delay (s)		13.9	14.5		139.3	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1863	169	100	1136	1665	593	483	71	144	323	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.99			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7207			4788	3421	3286	4857			4874	1316
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7207			4788	3421	3286	4857			4874	1316
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2025	184	109	1235	1810	645	525	77	157	351	92
RTOR Reduction (vph)	8	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	2201	0	0	1344	1810	645	583	0	0	517	83
Heavy Vehicles (%)	2%	1%	0%	3%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1945			1244	1984	427	631			682	184
v/s Ratio Prot	c0.31			c0.28	0.53	c0.20	0.12			c0.11	0.06
v/s Ratio Perm											
v/c Ratio	1.13			1.08	0.91	1.51	0.92			0.76	0.45
Uniform Delay, d1	36.5			37.0	18.7	43.5	43.0			41.4	39.5
Progression Factor	1.00			1.63	1.03	1.00	1.00			0.23	0.20
Incremental Delay, d2	66.3			42.6	3.4	241.6	21.3			6.7	6.7
Delay (s)	102.8			102.8	22.8	285.1	64.3			16.1	14.5
Level of Service	F			F	C	F	E			B	B
Approach Delay (s)	102.8				56.9		178.5			15.9	
Approach LOS	F				E		F			B	

Intersection Summary			
HCM 2000 Control Delay	88.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	74	258	2386	2489	590	76	479	1023	613	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3478	6408	7471	1615		1610	3383	1599	2733
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3478	6408	7471	1615		1610	3383	1599	2733
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	80	280	2593	2705	641	83	521	1112	666	1329
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	364	2593	2705	678	0	469	1164	666	1319
Heavy Vehicles (%)	2%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			486	2178	2988	646		499	1048	495	1530
v/s Ratio Prot			0.10	c0.40	0.36	c0.42		0.29	0.34	c0.42	c0.48
v/s Ratio Perm											
v/c Ratio			0.75	1.19	0.91	1.05		0.94	1.11	1.35	0.86
Uniform Delay, d1			41.3	33.0	28.2	30.0		33.6	34.5	34.5	18.7
Progression Factor			1.12	0.52	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			1.0	86.2	5.1	49.3		27.8	63.4	168.5	6.7
Delay (s)			47.1	103.4	33.4	79.3		61.4	97.9	203.0	25.4
Level of Service			D	F	C	E		E	F	F	C
Approach Delay (s)				96.5	43.1				85.9		
Approach LOS				F	D				F		

Intersection Summary			
HCM 2000 Control Delay	74.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1574	0	0	0	0	0	0	0	0	529	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6305	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1711	0	0	0	0	0	0	0	0	575	177
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	1711	0	0	0	0	0	0	0	0	721	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1324	
v/s Ratio Prot		c0.33									c0.11	
v/s Ratio Perm												
v/c Ratio		0.48									0.54	
Uniform Delay, d1		7.2									35.2	
Progression Factor		1.10									1.00	
Incremental Delay, d2		0.0									1.6	
Delay (s)		7.9									36.8	
Level of Service		A									D	
Approach Delay (s)		7.9			0.0			0.0			36.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	352	330	200	297	184	124	403	406	160	838	817
Average Queue (ft)	225	176	195	274	79	93	246	265	159	618	568
95th Queue (ft)	315	280	222	288	151	152	374	398	162	1053	1014
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				19						6	2
Queuing Penalty (veh)				125						0	0
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			25	28		16	59		93	1	
Queuing Penalty (veh)			124	115		34	52		108	2	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	184	192	876	868	420	436	356
Average Queue (ft)	113	130	813	784	398	394	214
95th Queue (ft)	162	176	983	1060	433	437	324
Link Distance (ft)	263	263	831	831	395	395	395
Upstream Blk Time (%)			72	44	10	8	0
Queuing Penalty (veh)			0	0	57	46	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	1128	1135	400	367	332	188	182	179	157	172	250	668
Average Queue (ft)	1086	1112	400	364	272	172	165	161	90	100	131	641
95th Queue (ft)	1287	1129	402	378	345	184	177	170	164	166	326	655
Link Distance (ft)	1091	1091				153	153	153	153	153		623
Upstream Blk Time (%)	16	81				67	65	65	2	2		99
Queuing Penalty (veh)	0	0				397	385	388	9	9		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		3	43	41	1							94
Queuing Penalty (veh)		37	159	153	2							279

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	649	623	125	167	162	123	52
Average Queue (ft)	624	234	13	85	54	24	3
95th Queue (ft)	742	619	67	155	137	82	28
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	71	0		0	0	0	
Queuing Penalty (veh)	0	0		0	0	0	
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	146	125	110	111	176	124	400	450	1258	1258	1238	550
Average Queue (ft)	69	49	61	59	63	67	384	449	1222	1222	1202	368
95th Queue (ft)	123	105	95	97	112	105	424	452	1259	1241	1309	655
Link Distance (ft)	153	153	153	153	153	153			1201	1201	1201	
Upstream Blk Time (%)	0	0			0	0			69	52	20	
Queuing Penalty (veh)	1	0			0	0			0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							7	78	90		10	9
Queuing Penalty (veh)							33	387	896		65	44

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>	>
Maximum Queue (ft)	538	553	553	375	388	119
Average Queue (ft)	513	542	461	108	35	7
95th Queue (ft)	577	556	768	444	205	59
Link Distance (ft)	538	538	538	538	538	
Upstream Blk Time (%)	61	100	69	13	0	
Queuing Penalty (veh)	0	0	0	0	0	
Storage Bay Dist (ft)						100
Storage Blk Time (%)						3
Queuing Penalty (veh)						16

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	89	136	130	251	205	116	52
Average Queue (ft)	7	71	86	149	96	41	11
95th Queue (ft)	47	125	136	231	186	87	38
Link Distance (ft)	150	150	150	1016	1016	1016	1016
Upstream Blk Time (%)		0	0				
Queuing Penalty (veh)		0	0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3924

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	417	144	403	501	380	62	206	163	151	211	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96		1.00	1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3932		1728	1900	1652	1652	3198		1745	3495	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3932		1728	1900	1652	1652	3198		1745	3495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	453	157	438	545	413	67	224	177	164	229	24
RTOR Reduction (vph)	0	26	0	0	0	250	0	121	0	0	6	0
Lane Group Flow (vph)	0	612	0	438	545	163	67	280	0	164	247	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	2%	1%	3%	0%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	7.7	24.0		10.0	26.3	
Effective Green, g (s)		30.0		35.0	35.0	35.0	7.7	24.0		10.0	26.3	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.06	0.20		0.08	0.22	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		983		504	554	481	106	639		145	765	
v/s Ratio Prot		c0.16		0.25	c0.29		0.04	c0.09		c0.09	0.07	
v/s Ratio Perm						0.10						
v/c Ratio		0.62		0.87	0.98	0.34	0.63	0.44		1.13	0.32	
Uniform Delay, d1		40.0		40.3	42.2	33.4	54.8	42.1		55.0	39.4	
Progression Factor		1.00		0.89	0.90	1.15	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2		13.1	31.3	0.4	11.7	2.2		114.3	1.1	
Delay (s)		41.2		49.1	69.2	38.9	66.4	44.3		169.3	40.5	
Level of Service		D		D	E	D	E	D		F	D	
Approach Delay (s)		41.2			53.9			47.4			91.1	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	743	960	0	1076	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3813	3813		3467	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3813	3813		3467	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	808	1043	0	1170	383
RTOR Reduction (vph)	0	0	0	0	0	69
Lane Group Flow (vph)	0	808	1043	0	1170	314
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2224	2224		1126	524
v/s Ratio Prot		0.21	c0.27		c0.34	0.19
v/s Ratio Perm						
v/c Ratio		0.36	0.47		1.04	0.60
Uniform Delay, d1		13.2	14.3		40.5	34.0
Progression Factor		0.90	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		37.5	1.9
Delay (s)		12.0	14.5		78.0	35.8
Level of Service		B	B		E	D
Approach Delay (s)		12.0	14.5		67.6	
Approach LOS		B	B		E	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1205	265	101	1319	1347	479	544	104	140	364	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.97			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7166			4831	3421	3351	4886			4921	1329
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7166			4831	3421	3351	4886			4921	1329
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1310	288	110	1434	1464	521	591	113	152	396	120
RTOR Reduction (vph)	5	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	1593	0	0	1544	1464	521	676	0	0	560	108
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	0%	1%	0%	0%	1%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1934			1256	1984	435	635			688	186
v/s Ratio Prot	c0.22			c0.32	0.43	c0.16	0.14			c0.11	0.08
v/s Ratio Perm											
v/c Ratio	0.82			1.23	0.74	1.20	1.06			0.81	0.58
Uniform Delay, d1	34.3			37.0	15.4	43.5	43.5			41.7	40.3
Progression Factor	1.00			1.69	0.82	1.00	1.00			0.21	0.19
Incremental Delay, d2	4.1			107.3	1.4	109.4	54.2			7.8	9.5
Delay (s)	38.4			170.0	14.1	152.9	97.7			16.6	17.2
Level of Service	D			F	B	F	F			B	B
Approach Delay (s)	38.4				94.2		121.2			16.7	
Approach LOS	D				F		F			B	

Intersection Summary			
HCM 2000 Control Delay	77.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	11	52	230	1677	2411	446	103	333	436	416	1059
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (prot)			3440	6536	7695	1615		1610	3419	1615	2787
Flt Permitted			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (perm)			3440	6536	7695	1615		1610	3419	1615	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	57	250	1823	2621	485	112	362	474	452	1151
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	319	1823	2621	551	0	271	565	452	1141
Heavy Vehicles (%)	0%	10%	0%	0%	0%	0%	0%	2%	0%	0%	2%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			481	2222	3078	646		499	1059	500	1560
v/s Ratio Prot			0.09	0.28	0.34	c0.34		0.17	0.17	c0.28	c0.41
v/s Ratio Perm											
v/c Ratio			0.66	0.82	0.85	0.85		0.54	0.53	0.90	0.73
Uniform Delay, d1			40.8	30.2	27.3	27.3		28.6	28.5	33.1	16.4
Progression Factor			1.10	0.56	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			2.8	1.4	3.2	13.5		4.2	1.9	22.3	3.1
Delay (s)			47.5	18.2	30.5	40.8		32.8	30.4	55.4	19.5
Level of Service			D	B	C	D		C	C	E	B
Approach Delay (s)				22.6	32.4				30.2		
Approach LOS				C	C				C		

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	934	0	0	0	0	0	0	0	0	615	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6233	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6233	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1015	0	0	0	0	0	0	0	0	668	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	64	0
Lane Group Flow (vph)	0	1015	0	0	0	0	0	0	0	0	841	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Parking (#/hr)			0									
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1308	
v/s Ratio Prot		c0.20									c0.13	
v/s Ratio Perm												
v/c Ratio		0.29									0.64	
Uniform Delay, d1		6.0									36.1	
Progression Factor		1.19									1.00	
Incremental Delay, d2		0.1									2.4	
Delay (s)		7.2									38.5	
Level of Service		A									D	
Approach Delay (s)		7.2			0.0			0.0			38.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	268	256	200	293	173	124	193	201	160	426	379
Average Queue (ft)	169	136	188	273	66	55	100	78	136	236	183
95th Queue (ft)	241	227	247	288	138	108	167	170	188	554	497
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				22	1						
Queuing Penalty (veh)				142	3						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			23	36		4	20		51	3	
Queuing Penalty (veh)			116	145		4	13		54	4	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	148	157	993	972	420	424	362
Average Queue (ft)	86	96	906	885	377	372	237
95th Queue (ft)	130	141	1194	1249	447	446	338
Link Distance (ft)	263	263	947	947	395	395	395
Upstream Blk Time (%)			77	47	6	4	0
Queuing Penalty (veh)			0	0	26	20	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	1530	1544	400	367	333	176	175	174	113	105	250	661
Average Queue (ft)	1459	1501	400	360	259	171	163	159	38	52	169	639
95th Queue (ft)	1836	1663	400	394	346	181	173	167	98	97	351	648
Link Distance (ft)	1504	1504				153	153	153	153	153		623
Upstream Blk Time (%)	11	84				67	65	65	0			97
Queuing Penalty (veh)	0	0				371	359	360	0			0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		4	31	27	0						0	95
Queuing Penalty (veh)		37	74	64	1						0	227

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	649	626	166	183	199	166	92
Average Queue (ft)	628	310	34	131	109	64	7
95th Queue (ft)	713	703	117	195	195	160	49
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	65	0		1	0	0	0
Queuing Penalty (veh)	0	0		2	1	0	0
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	138	132	94	106	196	172	400	450	1132	1132	1132	383
Average Queue (ft)	71	56	64	57	66	68	391	449	1132	1132	1103	152
95th Queue (ft)	123	113	93	92	137	119	414	451	1134	1132	1231	286
Link Distance (ft)	153	153	153	153	153	153			1117	1117	1117	
Upstream Blk Time (%)	0	0							89	62	12	
Queuing Penalty (veh)	0	0							0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							6	88	96		0	
Queuing Penalty (veh)							31	422	924		2	

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB
Directions Served	L	LT	T	>
Maximum Queue (ft)	488	534	418	20
Average Queue (ft)	488	534	418	1
95th Queue (ft)	648	538	764	14
Link Distance (ft)	538	538	538	538
Upstream Blk Time (%)	80	100	60	
Queuing Penalty (veh)	0	0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				0
Queuing Penalty (veh)				1

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	53	81	102	274	261	161	56
Average Queue (ft)	4	29	47	226	159	71	7
95th Queue (ft)	30	71	94	306	263	142	37
Link Distance (ft)	150	150	150	255	255	255	255
Upstream Blk Time (%)				9	1		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3403

Build (2023) Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	534	98	409	493	452	88	434	268	191	232	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3533	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3895		1697	1900	1662	1678	3277		1745	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	580	107	445	536	491	96	472	291	208	252	29
RTOR Reduction (vph)	0	11	0	0	0	302	0	78	0	0	7	0
Lane Group Flow (vph)	0	726	0	445	536	189	96	685	0	208	274	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Effective Green, g (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.08	0.20		0.08	0.20	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		973		494	554	484	134	655		145	718	
v/s Ratio Prot		c0.19		0.26	c0.28		0.06	c0.21		c0.12	0.08	
v/s Ratio Perm						0.11						
v/c Ratio		0.75		0.90	0.97	0.39	0.72	1.05		1.43	0.38	
Uniform Delay, d1		41.5		40.8	41.9	34.0	53.9	48.0		55.0	41.3	
Progression Factor		1.00		0.91	0.91	1.25	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1		17.1	27.0	0.4	16.6	47.5		230.3	1.5	
Delay (s)		44.6		54.2	65.2	42.7	70.5	95.5		285.3	42.8	
Level of Service		D		D	E	D	E	F		F	D	
Approach Delay (s)		44.6			54.4			92.7			146.0	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1002	973	0	1405	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1089	1058	0	1527	420
RTOR Reduction (vph)	0	0	0	0	0	66
Lane Group Flow (vph)	0	1089	1058	0	1527	354
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2246	2224		1115	519
v/s Ratio Prot		c0.28	0.28		c0.44	0.22
v/s Ratio Perm						
v/c Ratio		0.48	0.48		1.37	0.68
Uniform Delay, d1		14.5	14.4		40.5	35.1
Progression Factor		0.98	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		172.1	3.7
Delay (s)		14.3	14.6		212.6	38.8
Level of Service		B	B		F	D
Approach Delay (s)		14.3	14.6		175.1	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	90.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1972	169	100	1136	1705	600	483	71	144	323	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.99			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7212			4788	3421	3286	4857			4874	1316
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7212			4788	3421	3286	4857			4874	1316
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2143	184	109	1235	1853	652	525	77	157	351	92
RTOR Reduction (vph)	8	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	2319	0	0	1344	1853	652	583	0	0	517	83
Heavy Vehicles (%)	2%	1%	0%	3%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1947			1244	1984	427	631			682	184
v/s Ratio Prot	c0.32			c0.28	0.54	c0.20	0.12			c0.11	0.06
v/s Ratio Perm											
v/c Ratio	1.19			1.08	0.93	1.53	0.92			0.76	0.45
Uniform Delay, d1	36.5			37.0	19.2	43.5	43.0			41.4	39.5
Progression Factor	1.00			1.62	1.06	1.00	1.00			0.23	0.20
Incremental Delay, d2	91.4			42.3	4.2	248.8	21.3			6.7	6.7
Delay (s)	127.9			102.4	24.5	292.3	64.3			16.1	14.5
Level of Service	F			F	C	F	E			B	B
Approach Delay (s)	127.9				57.2		182.8			15.8	
Approach LOS	F				E		F			B	

Intersection Summary			
HCM 2000 Control Delay	97.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	74	258	2502	2529	597	76	479	1023	613	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3478	6408	7471	1615		1610	3383	1599	2733
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3478	6408	7471	1615		1610	3383	1599	2733
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	80	280	2720	2749	649	83	521	1112	666	1329
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	364	2720	2749	686	0	469	1164	666	1319
Heavy Vehicles (%)	2%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			486	2178	2988	646		499	1048	495	1530
v/s Ratio Prot			0.10	c0.42	0.37	c0.43		0.29	0.34	c0.42	c0.48
v/s Ratio Perm											
v/c Ratio			0.75	1.25	0.92	1.06		0.94	1.11	1.35	0.86
Uniform Delay, d1			41.3	33.0	28.5	30.0		33.6	34.5	34.5	18.7
Progression Factor			1.12	0.53	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			1.0	112.4	5.9	53.2		27.8	63.4	168.5	6.7
Delay (s)			47.4	129.8	34.4	83.2		61.4	97.9	203.0	25.4
Level of Service			D	F	C	F		E	F	F	C
Approach Delay (s)				120.0	44.7				85.9		
Approach LOS				F	D				F		

Intersection Summary			
HCM 2000 Control Delay	82.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1581	0	0	0	0	0	0	0	0	529	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6305	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1718	0	0	0	0	0	0	0	0	575	177
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	1718	0	0	0	0	0	0	0	0	722	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1324	
v/s Ratio Prot		c0.33									c0.11	
v/s Ratio Perm												
v/c Ratio		0.48									0.55	
Uniform Delay, d1		7.2									35.2	
Progression Factor		1.11									1.00	
Incremental Delay, d2		0.0									1.6	
Delay (s)		8.0									36.9	
Level of Service		A									D	
Approach Delay (s)		8.0			0.0			0.0			36.9	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	355	323	200	296	191	124	424	449	160	1005	969
Average Queue (ft)	227	185	195	273	83	98	248	265	159	693	640
95th Queue (ft)	318	289	229	286	156	152	397	418	162	1114	1063
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				18						7	1
Queuing Penalty (veh)				124						0	0
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			24	29		16	56		93	1	
Queuing Penalty (veh)			119	118		35	50		108	2	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	193	212	828	809	424	429	318
Average Queue (ft)	116	129	790	775	399	394	196
95th Queue (ft)	170	180	905	956	426	428	282
Link Distance (ft)	263	263	788	788	395	395	395
Upstream Blk Time (%)			80	47	10	8	
Queuing Penalty (veh)			0	0	58	47	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	1744	1756	400	367	332	180	182	170	155	158	250	669
Average Queue (ft)	1717	1725	400	366	277	173	165	159	90	104	127	642
95th Queue (ft)	1734	1745	403	369	348	180	176	166	162	162	323	654
Link Distance (ft)	1702	1702				153	153	153	153	153		624
Upstream Blk Time (%)	25	93				67	65	65	1	1		99
Queuing Penalty (veh)	0	0				404	394	393	8	6		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		3	43	43	1							95
Queuing Penalty (veh)		41	168	170	2							284

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	660	620	108	182	176	152	41
Average Queue (ft)	627	264	7	113	81	30	2
95th Queue (ft)	745	660	49	178	170	103	25
Link Distance (ft)	624	624		162	162	162	162
Upstream Blk Time (%)	66	0		1	0	0	
Queuing Penalty (veh)	0	0		1	0	0	
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	151	132	114	120	108	123	400	450	1152	1160	1144	550
Average Queue (ft)	65	46	63	60	59	70	389	449	1125	1125	1099	372
95th Queue (ft)	113	94	100	98	97	108	419	449	1143	1143	1206	659
Link Distance (ft)	153	153	153	153	153	153			1105	1105	1105	
Upstream Blk Time (%)	0	0	0	0	0	0			69	54	15	
Queuing Penalty (veh)	1	0	0	0	0	0			0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							8	82	94		9	8
Queuing Penalty (veh)							39	415	949		63	43

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>	>
Maximum Queue (ft)	551	556	548	328	366	90
Average Queue (ft)	500	545	314	29	21	5
95th Queue (ft)	646	562	749	201	167	49
Link Distance (ft)	538	538	538	538	538	
Upstream Blk Time (%)	79	97	52	1	0	
Queuing Penalty (veh)	0	0	0	0	0	
Storage Bay Dist (ft)						100
Storage Blk Time (%)					2	
Queuing Penalty (veh)					12	

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	65	135	138	288	244	125	34
Average Queue (ft)	4	73	87	200	122	46	2
95th Queue (ft)	34	128	138	300	231	96	17
Link Distance (ft)	150	150	150	273	273	273	273
Upstream Blk Time (%)		0	0	2	0		
Queuing Penalty (veh)		0	0	0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 4054

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	417	144	403	501	388	62	206	163	160	211	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96		1.00	1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3932		1728	1900	1652	1652	3198		1745	3495	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3932		1728	1900	1652	1652	3198		1745	3495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	453	157	438	545	422	67	224	177	174	229	24
RTOR Reduction (vph)	0	26	0	0	0	256	0	121	0	0	6	0
Lane Group Flow (vph)	0	612	0	438	545	166	67	280	0	174	247	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	2%	1%	3%	0%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	7.7	24.0		10.0	26.3	
Effective Green, g (s)		30.0		35.0	35.0	35.0	7.7	24.0		10.0	26.3	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.06	0.20		0.08	0.22	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		983		504	554	481	106	639		145	765	
v/s Ratio Prot		c0.16		0.25	c0.29		0.04	c0.09		c0.10	0.07	
v/s Ratio Perm						0.10						
v/c Ratio		0.62		0.87	0.98	0.35	0.63	0.44		1.20	0.32	
Uniform Delay, d1		40.0		40.3	42.2	33.5	54.8	42.1		55.0	39.4	
Progression Factor		1.00		0.89	0.89	1.16	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.2		13.1	31.3	0.4	11.7	2.2		138.4	1.1	
Delay (s)		41.2		49.0	69.1	39.3	66.4	44.3		193.4	40.5	
Level of Service		D		D	E	D	E	D		F	D	
Approach Delay (s)		41.2			53.9			47.4			102.8	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	752	968	0	1198	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3813	3813		3467	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3813	3813		3467	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	817	1052	0	1302	383
RTOR Reduction (vph)	0	0	0	0	0	68
Lane Group Flow (vph)	0	817	1052	0	1302	316
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2224	2224		1126	524
v/s Ratio Prot		0.21	c0.28		c0.38	0.20
v/s Ratio Perm						
v/c Ratio		0.37	0.47		1.16	0.60
Uniform Delay, d1		13.3	14.4		40.5	34.0
Progression Factor		0.93	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		80.7	2.0
Delay (s)		12.4	14.5		121.2	35.9
Level of Service		B	B		F	D
Approach Delay (s)		12.4	14.5		101.8	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1335	265	101	1358	1394	488	544	104	140	364	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.98			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7182			4831	3421	3351	4886			4921	1329
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7182			4831	3421	3351	4886			4921	1329
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1451	288	110	1476	1515	530	591	113	152	396	120
RTOR Reduction (vph)	5	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	1734	0	0	1586	1515	530	676	0	0	560	108
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	0%	1%	0%	0%	1%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1939			1256	1984	435	635			688	186
v/s Ratio Prot	c0.24			c0.33	0.44	c0.16	0.14			c0.11	0.08
v/s Ratio Perm											
v/c Ratio	0.89			1.26	0.76	1.22	1.06			0.81	0.58
Uniform Delay, d1	35.1			37.0	15.8	43.5	43.5			41.7	40.3
Progression Factor	1.00			1.68	0.86	1.00	1.00			0.21	0.19
Incremental Delay, d2	6.9			121.8	1.6	117.6	54.2			7.8	9.5
Delay (s)	42.0			183.9	15.1	161.1	97.7			16.6	17.2
Level of Service	D			F	B	F	F			B	B
Approach Delay (s)	42.0				101.4		124.9			16.7	
Approach LOS	D				F		F			B	

Intersection Summary			
HCM 2000 Control Delay	82.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	11	52	230	1816	2462	454	103	368	436	416	1059
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (prot)			3440	6536	7695	1615		1610	3411	1615	2787
Flt Permitted			0.95	1.00	1.00	1.00		0.95	0.99	1.00	1.00
Satd. Flow (perm)			3440	6536	7695	1615		1610	3411	1615	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	57	250	1974	2676	493	112	400	474	452	1151
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	319	1974	2676	559	0	284	590	452	1141
Heavy Vehicles (%)	0%	10%	0%	0%	0%	0%	0%	2%	0%	0%	2%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			481	2222	3078	646		499	1057	500	1560
v/s Ratio Prot			0.09	0.30	c0.35	0.35		0.18	0.17	c0.28	c0.41
v/s Ratio Perm											
v/c Ratio			0.66	0.89	0.87	0.87		0.57	0.56	0.90	0.73
Uniform Delay, d1			40.8	31.2	27.6	27.5		28.9	28.8	33.1	16.4
Progression Factor			1.10	0.54	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			2.2	1.9	3.7	14.5		4.7	2.1	22.3	3.1
Delay (s)			47.2	18.7	31.3	42.0		33.6	30.9	55.4	19.5
Level of Service			D	B	C	D		C	C	E	B
Approach Delay (s)				22.6	33.3				30.4		
Approach LOS				C	C				C		

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	942	0	0	0	0	0	0	0	0	615	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6233	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6233	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1024	0	0	0	0	0	0	0	0	668	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	64	0
Lane Group Flow (vph)	0	1024	0	0	0	0	0	0	0	0	841	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Parking (#/hr)			0									
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1308	
v/s Ratio Prot		c0.20									c0.13	
v/s Ratio Perm												
v/c Ratio		0.29									0.64	
Uniform Delay, d1		6.0									36.1	
Progression Factor		1.18									1.00	
Incremental Delay, d2		0.1									2.4	
Delay (s)		7.2									38.5	
Level of Service		A									D	
Approach Delay (s)		7.2			0.0			0.0			38.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	282	262	200	294	220	124	156	184	160	608	564
Average Queue (ft)	175	135	194	274	74	66	101	79	151	341	276
95th Queue (ft)	250	232	228	285	155	123	157	167	183	651	602
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				19	0						
Queuing Penalty (veh)				123	1						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			25	30		6	21		76	1	
Queuing Penalty (veh)			125	123		6	13		80	2	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	155	155	837	831	426	424	317
Average Queue (ft)	95	102	766	742	398	394	205
95th Queue (ft)	139	140	952	1031	430	426	291
Link Distance (ft)	263	263	788	788	395	395	395
Upstream Blk Time (%)			77	48	9	7	
Queuing Penalty (veh)			0	0	49	36	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	840	862	400	367	333	177	183	174	120	124	250	664
Average Queue (ft)	671	829	400	359	265	172	164	159	41	53	172	639
95th Queue (ft)	1144	841	400	391	358	180	176	167	101	107	352	650
Link Distance (ft)	812	812				153	153	153	153	153		623
Upstream Blk Time (%)	7	69				68	66	65	0	0		98
Queuing Penalty (veh)	0	0				384	373	371	0	0		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		5	33	25	0						0	95
Queuing Penalty (veh)		53	87	68	1						0	233

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	640	625	141	182	193	161	73
Average Queue (ft)	630	357	32	126	108	54	5
95th Queue (ft)	713	749	109	185	189	140	40
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	63	0		1	1	0	0
Queuing Penalty (veh)	0	0		2	1	0	0
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	144	130	92	95	232	111	400	450	1196	1196	1196	389
Average Queue (ft)	74	49	61	54	62	64	390	449	1196	1196	1154	135
95th Queue (ft)	123	100	94	84	128	98	414	451	1199	1196	1368	280
Link Distance (ft)	153	153	153	153	153	153			1181	1181	1181	
Upstream Blk Time (%)	0	0							89	65	11	
Queuing Penalty (veh)	1	0							0	0	0	
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							6	87	95		1	
Queuing Penalty (veh)							32	428	939		5	

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>
Maximum Queue (ft)	468	543	326	111	78
Average Queue (ft)	468	538	321	4	3
95th Queue (ft)	582	550	753	78	55
Link Distance (ft)	538	538	538	538	538
Upstream Blk Time (%)	40	100	60	0	
Queuing Penalty (veh)	0	0	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	27	100	101	242	233	166	85
Average Queue (ft)	1	34	47	214	150	67	8
95th Queue (ft)	13	81	94	273	235	134	44
Link Distance (ft)	150	150	150	227	227	227	227
Upstream Blk Time (%)				13	1		
Queuing Penalty (veh)				0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3537

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	534	98	409	493	449	88	434	268	188	232	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3533	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3895		1697	1900	1662	1678	3277		1745	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	580	107	445	536	488	96	472	291	204	252	29
RTOR Reduction (vph)	0	11	0	0	0	300	0	78	0	0	7	0
Lane Group Flow (vph)	0	726	0	445	536	188	96	685	0	204	274	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Effective Green, g (s)		30.0		35.0	35.0	35.0	9.6	24.0		10.0	24.4	
Actuated g/C Ratio		0.25		0.29	0.29	0.29	0.08	0.20		0.08	0.20	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		973		494	554	484	134	655		145	718	
v/s Ratio Prot		c0.19		0.26	c0.28		0.06	c0.21		c0.12	0.08	
v/s Ratio Perm						0.11						
v/c Ratio		0.75		0.90	0.97	0.39	0.72	1.05		1.41	0.38	
Uniform Delay, d1		41.5		40.8	41.9	33.9	53.9	48.0		55.0	41.3	
Progression Factor		1.00		0.91	0.91	1.24	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1		17.1	27.1	0.4	16.6	47.5		219.0	1.5	
Delay (s)		44.6		54.2	65.3	42.7	70.5	95.5		274.0	42.8	
Level of Service		D		D	E	D	E	F		F	D	
Approach Delay (s)		44.6			54.4			92.7			140.1	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	999	970	0	1361	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1086	1054	0	1479	420
RTOR Reduction (vph)	0	0	0	0	0	67
Lane Group Flow (vph)	0	1086	1054	0	1479	353
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		70.0	70.0		39.0	39.0
Effective Green, g (s)		70.0	70.0		39.0	39.0
Actuated g/C Ratio		0.58	0.58		0.32	0.32
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		2246	2224		1115	519
v/s Ratio Prot		c0.28	0.28		c0.43	0.22
v/s Ratio Perm						
v/c Ratio		0.48	0.47		1.33	0.68
Uniform Delay, d1		14.5	14.4		40.5	35.1
Progression Factor		0.97	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.2		153.2	3.7
Delay (s)		14.1	14.6		193.7	38.8
Level of Service		B	B		F	D
Approach Delay (s)		14.1	14.6		159.4	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	82.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1925	169	100	1136	1688	597	483	71	144	323	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	0.81			0.94	0.95	0.97	0.91			0.94	0.86
Frt	0.99			1.00	1.00	1.00	0.98			1.00	0.85
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (prot)	7210			4788	3421	3286	4857			4874	1316
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.95	1.00
Satd. Flow (perm)	7210			4788	3421	3286	4857			4874	1316
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2092	184	109	1235	1835	649	525	77	157	351	92
RTOR Reduction (vph)	8	0	0	0	0	0	19	0	0	0	0
Lane Group Flow (vph)	2268	0	0	1344	1835	649	583	0	0	517	83
Heavy Vehicles (%)	2%	1%	0%	3%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	Prot
Protected Phases	2		1	1	6	7	7		4	4	4
Permitted Phases											
Actuated Green, G (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Effective Green, g (s)	27.0			26.0	58.0	13.0	13.0			14.0	14.0
Actuated g/C Ratio	0.27			0.26	0.58	0.13	0.13			0.14	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	5.0
Lane Grp Cap (vph)	1946			1244	1984	427	631			682	184
v/s Ratio Prot	c0.31			c0.28	0.54	c0.20	0.12			c0.11	0.06
v/s Ratio Perm											
v/c Ratio	1.17			1.08	0.92	1.52	0.92			0.76	0.45
Uniform Delay, d1	36.5			37.0	19.0	43.5	43.0			41.4	39.5
Progression Factor	1.00			1.62	1.05	1.00	1.00			0.23	0.20
Incremental Delay, d2	80.5			42.5	3.8	245.7	21.3			6.7	6.7
Delay (s)	117.0			102.6	23.8	289.2	64.3			16.1	14.5
Level of Service	F			F	C	F	E			B	B
Approach Delay (s)	117.0				57.1		181.0			15.8	
Approach LOS	F				E		F			B	

Intersection Summary			
HCM 2000 Control Delay	93.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	74	258	2452	2512	594	76	479	1023	613	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.91	0.91	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	0.85	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3478	6408	7471	1615		1610	3383	1599	2733
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3478	6408	7471	1615		1610	3383	1599	2733
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	80	280	2665	2730	646	83	521	1112	666	1329
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	10
Lane Group Flow (vph)	0	0	364	2665	2730	683	0	469	1164	666	1319
Heavy Vehicles (%)	2%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6	6		8	8	8	1 8
Permitted Phases											
Actuated Green, G (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Effective Green, g (s)			14.0	34.0	40.0	40.0		31.0	31.0	31.0	56.0
Actuated g/C Ratio			0.14	0.34	0.40	0.40		0.31	0.31	0.31	0.56
Clearance Time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	
Lane Grp Cap (vph)			486	2178	2988	646		499	1048	495	1530
v/s Ratio Prot			0.10	c0.42	0.37	c0.42		0.29	0.34	c0.42	c0.48
v/s Ratio Perm											
v/c Ratio			0.75	1.22	0.91	1.06		0.94	1.11	1.35	0.86
Uniform Delay, d1			41.3	33.0	28.4	30.0		33.6	34.5	34.5	18.7
Progression Factor			1.12	0.53	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			1.0	101.0	5.6	51.7		27.8	63.4	168.5	6.7
Delay (s)			47.2	118.4	33.9	81.7		61.4	97.9	203.0	25.4
Level of Service			D	F	C	F		E	F	F	C
Approach Delay (s)				109.8	44.0				85.9		
Approach LOS				F	D				F		

Intersection Summary			
HCM 2000 Control Delay	78.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1578	0	0	0	0	0	0	0	0	529	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6305	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1715	0	0	0	0	0	0	0	0	575	177
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	1715	0	0	0	0	0	0	0	0	722	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1324	
v/s Ratio Prot		c0.33									c0.11	
v/s Ratio Perm												
v/c Ratio		0.48									0.55	
Uniform Delay, d1		7.2									35.2	
Progression Factor		1.10									1.00	
Incremental Delay, d2		0.0									1.6	
Delay (s)		8.0									36.9	
Level of Service		A									D	
Approach Delay (s)		8.0			0.0			0.0			36.9	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	368	313	200	298	223	124	411	423	160	751	707
Average Queue (ft)	228	184	194	274	94	98	226	245	159	560	504
95th Queue (ft)	326	280	231	290	186	154	354	389	164	922	868
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				18	0						
Queuing Penalty (veh)				123	1						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			24	29		17	55		92	1	
Queuing Penalty (veh)			120	117		36	49		107	1	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	199	203	842	818	414	431	332
Average Queue (ft)	113	124	762	737	384	379	213
95th Queue (ft)	165	174	945	981	445	442	315
Link Distance (ft)	263	263	788	788	395	395	395
Upstream Blk Time (%)			65	40	7	5	0
Queuing Penalty (veh)			0	0	41	30	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	TR	UL	L	L	T	T	L	L
Maximum Queue (ft)	850	870	400	367	333	186	191	189	165	164	250	674
Average Queue (ft)	626	833	400	365	263	172	166	162	106	107	144	643
95th Queue (ft)	1162	852	402	373	338	182	181	175	154	155	340	660
Link Distance (ft)	812	812				153	153	153	153	153		623
Upstream Blk Time (%)	7	61				66	65	65	1	1		99
Queuing Penalty (veh)	0	0				396	389	388	5	4		0
Storage Bay Dist (ft)			300	300	300						200	
Storage Blk Time (%)		2	38	31	0						0	95
Queuing Penalty (veh)		24	148	120	2						0	282

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SW	SW	SW	SW
Directions Served	T	T	TR	<L	L	LR	R
Maximum Queue (ft)	649	618	113	182	185	152	59
Average Queue (ft)	627	256	13	121	96	35	2
95th Queue (ft)	718	649	64	191	188	117	29
Link Distance (ft)	623	623		162	162	162	162
Upstream Blk Time (%)	67	0		1	0	0	0
Queuing Penalty (veh)	0	0		1	1	0	0
Storage Bay Dist (ft)			300				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	125	106	97	108	123	118	302	294	308	296	271	270
Average Queue (ft)	65	43	58	58	59	69	272	270	270	262	187	180
95th Queue (ft)	113	92	91	95	95	103	291	294	298	314	317	307
Link Distance (ft)	153	153	153	153	153	153			255	255	255	
Upstream Blk Time (%)	0				0		77	62	55	33	7	11
Queuing Penalty (veh)	0				0		0	0	0	0	0	0
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							77	62	55		7	11
Queuing Penalty (veh)							386	312	552		45	55

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB
Directions Served	L	LT	T	R	>	>
Maximum Queue (ft)	553	558	569	535	358	90
Average Queue (ft)	469	544	473	93	31	7
95th Queue (ft)	690	557	767	416	191	59
Link Distance (ft)	538	538	538	538	538	
Upstream Blk Time (%)	59	99	69	4	0	
Queuing Penalty (veh)	0	0	0	0	0	
Storage Bay Dist (ft)						100
Storage Blk Time (%)					3	
Queuing Penalty (veh)					17	

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	68	142	166	200	191	152	34
Average Queue (ft)	5	76	107	183	121	50	2
95th Queue (ft)	43	143	157	226	209	111	15
Link Distance (ft)	150	150	150	185	185	185	185
Upstream Blk Time (%)	0	0	1	18	1	0	
Queuing Penalty (veh)	0	0	3	0	0	0	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 3756

Build (2023) Mitigated Conditions

HCM Signalized Intersection Capacity Analysis
38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

6/1/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	534	98	409	493	452	88	434	268	191	232	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3533	
Flt Permitted		0.87		0.12	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3389		217	1900	1662	1678	3277		1745	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	580	107	445	536	491	96	472	291	208	252	29
RTOR Reduction (vph)	0	12	0	0	0	76	0	78	0	0	7	0
Lane Group Flow (vph)	0	726	0	445	536	415	96	685	0	208	274	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		28.0		57.0	57.0	80.0	11.1	24.0		23.0	35.9	
Effective Green, g (s)		28.0		57.0	57.0	80.0	11.1	24.0		23.0	35.9	
Actuated g/C Ratio		0.23		0.48	0.48	0.67	0.09	0.20		0.19	0.30	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		790		399	902	1177	155	655		334	1056	
v/s Ratio Prot				c0.22	0.28	0.07	0.06	c0.21		c0.12	0.08	
v/s Ratio Perm		0.21		c0.31		0.18						
v/c Ratio		0.92		1.12	0.59	0.35	0.62	1.05		0.62	0.26	
Uniform Delay, d1		44.9		36.2	23.0	8.7	52.4	48.0		44.5	32.0	
Progression Factor		1.00		0.99	0.58	0.46	1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.4		76.2	0.9	0.2	7.2	47.5		3.6	0.6	
Delay (s)		60.3		112.1	14.3	4.1	59.6	95.5		48.1	32.5	
Level of Service		E		F	B	A	E	F		D	C	
Approach Delay (s)		60.3			40.5			91.5			39.2	
Approach LOS		E			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	56.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	1002	973	0	1405	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1089	1058	0	1527	420
RTOR Reduction (vph)	0	0	0	0	0	33
Lane Group Flow (vph)	0	1089	1058	0	1527	387
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		57.0	57.0		53.0	53.0
Effective Green, g (s)		57.0	57.0		47.0	47.0
Actuated g/C Ratio		0.48	0.48		0.39	0.39
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		1829	1811		1344	626
v/s Ratio Prot		c0.28	0.28		c0.44	0.24
v/s Ratio Perm						
v/c Ratio		0.60	0.58		1.14	0.62
Uniform Delay, d1		23.1	22.9		36.5	29.3
Progression Factor		1.09	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.5		70.9	1.8
Delay (s)		25.3	23.4		107.4	31.1
Level of Service		C	C		F	C
Approach Delay (s)		25.3	23.4		91.0	
Approach LOS		C	C		F	

Intersection Summary			
HCM 2000 Control Delay	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1972	169	100	1136	1705	600	483	71	144	323	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	0.76			0.94	0.91	0.94	0.95			0.91	
Frt	0.99			1.00	1.00	1.00	0.98			0.98	
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (prot)	8120			4832	4916	4777	3380			6195	
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (perm)	8120			4832	4916	4777	3380			6195	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2143	184	109	1235	1853	652	525	77	157	351	92
RTOR Reduction (vph)	8	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	2319	0	0	1344	1853	652	590	0	0	600	0
Heavy Vehicles (%)	2%	1%	0%	2%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	
Protected Phases	2		1	1	6	7	7		4	4	
Permitted Phases											
Actuated Green, G (s)	27.0			27.0	59.0	17.0	17.0			9.0	
Effective Green, g (s)	27.0			27.0	59.0	17.0	17.0			9.0	
Actuated g/C Ratio	0.27			0.27	0.59	0.17	0.17			0.09	
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Grp Cap (vph)	2192			1304	2900	812	574			557	
v/s Ratio Prot	c0.29			c0.28	0.38	0.14	c0.17			c0.10	
v/s Ratio Perm											
v/c Ratio	1.06			1.03	0.64	0.80	1.03			1.08	
Uniform Delay, d1	36.5			36.5	13.5	39.9	41.5			45.5	
Progression Factor	1.00			0.60	0.40	1.00	1.00			0.91	
Incremental Delay, d2	36.7			25.7	0.5	8.3	45.1			57.9	
Delay (s)	73.2			47.7	5.9	48.2	86.6			99.2	
Level of Service	E			D	A	D	F			F	
Approach Delay (s)	73.2				23.4		66.6			99.2	
Approach LOS	E				C		E			F	

Intersection Summary			
HCM 2000 Control Delay	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	74	258	2502	2529	597	76	479	1023	613	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.97	0.95	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	1.00	0.88
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3478	6408	7471	1615		3433	3539	1881	2830
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3478	6408	7471	1615		3433	3539	1881	2830
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	80	280	2720	2749	649	83	521	1112	666	1329
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	12
Lane Group Flow (vph)	0	0	364	2720	2749	686	0	521	1112	666	1317
Heavy Vehicles (%)	2%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6 7	6 7		8	8	8	7 8
Permitted Phases											
Actuated Green, G (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Effective Green, g (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Actuated g/C Ratio			0.12	0.44	0.39	0.39		0.34	0.34	0.34	0.46
Clearance Time (s)			5.0	5.0				5.0	5.0	5.0	
Lane Grp Cap (vph)			417	2819	2913	629		1167	1203	639	1301
v/s Ratio Prot			0.10	c0.42	0.37	c0.42		0.15	0.31	0.35	c0.47
v/s Ratio Perm											
v/c Ratio			0.87	0.96	0.94	1.09		0.45	0.92	1.04	1.01
Uniform Delay, d1			43.3	27.2	29.4	30.5		25.7	31.8	33.0	27.0
Progression Factor			1.35	0.22	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			6.2	3.4	7.9	62.9		1.2	13.2	47.1	28.0
Delay (s)			64.5	9.5	37.3	93.4		26.9	44.9	80.1	55.0
Level of Service			E	A	D	F		C	D	F	E
Approach Delay (s)				16.0	49.1				52.5		
Approach LOS				B	D				D		

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1581	0	0	0	0	0	0	0	0	529	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6305	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1718	0	0	0	0	0	0	0	0	575	177
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	1718	0	0	0	0	0	0	0	0	722	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1324	
v/s Ratio Prot		c0.33									c0.11	
v/s Ratio Perm												
v/c Ratio		0.48									0.55	
Uniform Delay, d1		7.2									35.2	
Progression Factor		0.59									1.00	
Incremental Delay, d2		0.1									1.6	
Delay (s)		4.4									36.9	
Level of Service		A									D	
Approach Delay (s)		4.4			0.0			0.0			36.9	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	571	562	200	299	278	124	453	522	158	296	238
Average Queue (ft)	445	411	191	243	62	90	297	319	125	136	89
95th Queue (ft)	659	651	222	351	161	159	494	530	175	266	187
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)	25	22		21	0						
Queuing Penalty (veh)	0	0		144	2						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			52	7		23	63		25	3	
Queuing Penalty (veh)			255	28		50	55		29	7	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	289	325	416	400	357	360	406
Average Queue (ft)	224	248	360	253	270	262	260
95th Queue (ft)	296	344	481	457	364	364	449
Link Distance (ft)	263	263	386	386	395	395	395
Upstream Blk Time (%)	3	8	31	5	0	0	8
Queuing Penalty (veh)	16	42	0	0	0	0	50
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	TR	UL	L	L	T	T	T
Maximum Queue (ft)	657	793	822	778	745	675	192	189	184	116	133	107
Average Queue (ft)	189	678	739	644	574	467	149	147	133	54	57	54
95th Queue (ft)	559	875	896	852	814	766	185	187	186	95	102	98
Link Distance (ft)	793	793	793	793	793	793	140	140	140	140	140	140
Upstream Blk Time (%)	0	6	24	11	6	7	11	8	6		0	0
Queuing Penalty (veh)	0	0	0	0	0	0	55	42	30		0	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SB	SB	SW	SW	SW	SW
Directions Served	L	L	L	T	TR	<L	L	L	LR
Maximum Queue (ft)	165	648	660	649	621	166	166	157	159
Average Queue (ft)	15	629	632	599	297	160	128	113	96
95th Queue (ft)	75	643	642	792	703	167	189	170	164
Link Distance (ft)		616	616	616	616	146	146	146	146
Upstream Blk Time (%)		80	97	59	0	44	9	6	6
Queuing Penalty (veh)		0	0	0	0	58	12	7	8
Storage Bay Dist (ft)	200								
Storage Blk Time (%)		0							
Queuing Penalty (veh)		1							

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	185	184	144	132	85	124	287	270	280	284	276	268
Average Queue (ft)	111	90	53	53	29	38	212	186	198	241	243	263
95th Queue (ft)	175	162	111	106	65	80	314	304	346	321	323	282
Link Distance (ft)	140	140	140	140	140	140	250	250	250	250	250	
Upstream Blk Time (%)	13	5	0	0	0	0	19	10	21	30	25	63
Queuing Penalty (veh)	62	24	1	0	0	0	0	0	0	0	0	0
Storage Bay Dist (ft)												500
Storage Blk Time (%)											25	63
Queuing Penalty (veh)											168	318

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB	NB
Directions Served	L	L	T	T	R	>	>
Maximum Queue (ft)	206	279	469	553	580	587	150
Average Queue (ft)	99	139	298	353	554	561	149
95th Queue (ft)	168	240	437	590	568	580	169
Link Distance (ft)	538	538	538	538	538	538	
Upstream Blk Time (%)				5	36	53	
Queuing Penalty (veh)				0	0	0	
Storage Bay Dist (ft)							100
Storage Blk Time (%)						45	1
Queuing Penalty (veh)						277	6

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	51	138	170	345	336	301	303
Average Queue (ft)	10	107	125	303	256	111	109
95th Queue (ft)	36	159	178	399	401	287	268
Link Distance (ft)	139	139	139	330	330	330	330
Upstream Blk Time (%)		0	1	41	20	1	1
Queuing Penalty (veh)		1	7	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1756

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	417	144	403	501	388	62	206	163	160	211	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.96		1.00	1.00	0.85	1.00	0.93		1.00	0.99	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3932		1728	1900	1652	1652	3198		1745	3495	
Flt Permitted		0.91		0.15	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3574		273	1900	1652	1652	3198		1745	3495	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	453	157	438	545	422	67	224	177	174	229	24
RTOR Reduction (vph)	0	26	0	0	0	130	0	122	0	0	6	0
Lane Group Flow (vph)	0	612	0	438	545	292	67	279	0	174	247	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	1%	2%	1%	3%	0%	2%	0%
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		28.2		60.0	60.0	82.0	7.7	22.0		22.0	36.3	
Effective Green, g (s)		28.2		60.0	60.0	82.0	7.7	22.0		22.0	36.3	
Actuated g/C Ratio		0.23		0.50	0.50	0.68	0.06	0.18		0.18	0.30	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		839		461	950	1197	106	586		319	1057	
v/s Ratio Prot				c0.21	0.29	0.04	c0.04	c0.09		c0.10	0.07	
v/s Ratio Perm		0.17		c0.26		0.13						
v/c Ratio		0.73		0.95	0.57	0.24	0.63	0.48		0.55	0.23	
Uniform Delay, d1		42.4		32.3	21.0	7.2	54.8	43.8		44.5	31.4	
Progression Factor		1.00		0.84	0.57	0.34	1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.2		26.5	0.7	0.1	11.7	2.8		1.9	0.5	
Delay (s)		45.6		53.5	12.8	2.5	66.4	46.6		46.4	31.9	
Level of Service		D		D	B	A	E	D		D	C	
Approach Delay (s)		45.6			22.4			49.5			37.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	752	968	0	1198	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3813	3813		3467	1615
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3813	3813		3467	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	817	1052	0	1302	383
RTOR Reduction (vph)	0	0	0	0	0	42
Lane Group Flow (vph)	0	817	1052	0	1302	341
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		60.0	60.0		50.0	50.0
Effective Green, g (s)		60.0	60.0		44.0	44.0
Actuated g/C Ratio		0.50	0.50		0.37	0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		1906	1906		1271	592
v/s Ratio Prot		0.21	c0.28		c0.38	0.21
v/s Ratio Perm						
v/c Ratio		0.43	0.55		1.02	0.58
Uniform Delay, d1		19.1	20.7		38.0	30.5
Progression Factor		0.90	1.00		1.00	1.00
Incremental Delay, d2		0.1	0.3		31.6	1.4
Delay (s)		17.3	21.1		69.6	31.9
Level of Service		B	C		E	C
Approach Delay (s)		17.3	21.1		61.0	
Approach LOS		B	C		E	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1335	265	101	1358	1394	488	544	104	140	364	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	0.76			0.94	0.91	0.94	0.95			0.91	
Frt	0.98			1.00	1.00	1.00	0.98			0.97	
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (prot)	8086			4831	4916	4872	3400			6238	
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (perm)	8086			4831	4916	4872	3400			6238	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1451	288	110	1476	1515	530	591	113	152	396	120
RTOR Reduction (vph)	4	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	1735	0	0	1586	1515	530	688	0	0	668	0
Heavy Vehicles (%)	1%	1%	0%	2%	2%	1%	0%	1%	0%	0%	1%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	
Protected Phases	2		1	1	6	7	7		4	4	
Permitted Phases											
Actuated Green, G (s)	19.0			33.0	57.0	18.0	18.0			10.0	
Effective Green, g (s)	19.0			33.0	57.0	18.0	18.0			10.0	
Actuated g/C Ratio	0.19			0.33	0.57	0.18	0.18			0.10	
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Grp Cap (vph)	1536			1594	2802	876	612			623	
v/s Ratio Prot	c0.21			c0.33	0.31	0.11	c0.20			c0.11	
v/s Ratio Perm											
v/c Ratio	1.13			0.99	0.54	0.61	1.12			1.07	
Uniform Delay, d1	40.5			33.4	13.4	37.7	41.0			45.0	
Progression Factor	1.00			0.52	0.15	1.00	1.00			0.97	
Incremental Delay, d2	67.2			15.6	0.4	3.1	75.8			52.4	
Delay (s)	107.7			33.0	2.4	40.8	116.8			96.0	
Level of Service	F			C	A	D	F			F	
Approach Delay (s)	107.7				18.0		84.2			96.0	
Approach LOS	F				B		F			F	

Intersection Summary			
HCM 2000 Control Delay	61.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	11	52	230	1816	2462	454	103	368	436	416	1059
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.97	0.95	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3440	6536	7695	1615		3433	3610	1900	2787
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3440	6536	7695	1615		3433	3610	1900	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	57	250	1974	2676	493	112	400	474	452	1151
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	41
Lane Group Flow (vph)	0	0	319	1974	2676	559	0	400	474	452	1110
Heavy Vehicles (%)	0%	10%	0%	0%	0%	0%	0%	2%	0%	0%	2%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6 7	6 7		8	8	8	7 8
Permitted Phases											
Actuated Green, G (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Effective Green, g (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Actuated g/C Ratio			0.12	0.44	0.39	0.39		0.34	0.34	0.34	0.46
Clearance Time (s)			5.0	5.0				5.0	5.0	5.0	
Lane Grp Cap (vph)			412	2875	3001	629		1167	1227	646	1282
v/s Ratio Prot			0.09	c0.30	c0.35	0.35		0.12	0.13	0.24	c0.40
v/s Ratio Perm											
v/c Ratio			0.77	0.69	0.89	0.89		0.34	0.39	0.70	0.87
Uniform Delay, d1			42.7	22.5	28.5	28.5		24.7	25.1	28.6	24.2
Progression Factor			1.20	0.21	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			4.0	0.4	4.5	17.0		0.8	0.9	6.2	8.0
Delay (s)			55.3	5.0	33.0	45.5		25.5	26.0	34.8	32.2
Level of Service			E	A	C	D		C	C	C	C
Approach Delay (s)				12.0	35.3				30.4		
Approach LOS				B	D				C		

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	942	0	0	0	0	0	0	0	0	615	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6233	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6233	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1024	0	0	0	0	0	0	0	0	668	237
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	64	0
Lane Group Flow (vph)	0	1024	0	0	0	0	0	0	0	0	841	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Parking (#/hr)			0									
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1308	
v/s Ratio Prot		c0.20									c0.13	
v/s Ratio Perm												
v/c Ratio		0.29									0.64	
Uniform Delay, d1		6.0									36.1	
Progression Factor		1.25									1.00	
Incremental Delay, d2		0.2									2.4	
Delay (s)		7.6									38.5	
Level of Service		A									D	
Approach Delay (s)		7.6			0.0			0.0			38.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	314	283	200	287	147	124	192	210	158	209	155
Average Queue (ft)	183	146	167	184	33	47	92	66	111	100	64
95th Queue (ft)	286	262	230	315	105	108	159	164	166	182	125
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)				7	0						
Queuing Penalty (veh)				43	1						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			27	8		6	26		13	3	
Queuing Penalty (veh)			135	30		6	16		13	5	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	232	271	406	402	371	381	322
Average Queue (ft)	130	139	323	220	286	281	197
95th Queue (ft)	207	224	471	429	358	352	326
Link Distance (ft)	263	263	386	386	395	395	395
Upstream Blk Time (%)	0	0	21	4	0	0	2
Queuing Penalty (veh)	0	1	0	0	0	0	11
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	TR	UL	L	L	T	T	T
Maximum Queue (ft)	808	813	836	400	367	264	177	176	184	112	99	83
Average Queue (ft)	301	808	810	400	350	146	150	155	156	40	33	30
95th Queue (ft)	884	813	820	400	386	228	173	168	170	87	73	68
Link Distance (ft)	793	793	793				140	140	140	140	140	140
Upstream Blk Time (%)	3	74	98				11	11	11	0	0	
Queuing Penalty (veh)	0	0	0				52	52	53	0	0	
Storage Bay Dist (ft)				300	300	300						
Storage Blk Time (%)			71	80	4							
Queuing Penalty (veh)			657	178	9							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SB	SB	SW	SW	SW	SW
Directions Served	L	L	L	T	TR	<L	L	L	LR
Maximum Queue (ft)	145	637	638	643	331	172	193	163	179
Average Queue (ft)	24	620	630	630	160	161	153	133	126
95th Queue (ft)	101	664	635	639	312	168	182	172	182
Link Distance (ft)		616	616	616		146	146	146	146
Upstream Blk Time (%)		50	85	62		40	23	16	14
Queuing Penalty (veh)		0	0	0		61	35	25	22
Storage Bay Dist (ft)	200				300				
Storage Blk Time (%)		0		3	2				
Queuing Penalty (veh)		0		12	5				

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	119	101	59	56	32	83	374	450	563	563	562	547
Average Queue (ft)	54	35	17	13	3	29	241	417	533	535	474	432
95th Queue (ft)	103	82	46	41	16	67	360	517	645	666	660	654
Link Distance (ft)	140	140	140	140	140	140			547	547	547	
Upstream Blk Time (%)	0	0							43	24	15	7
Queuing Penalty (veh)	0	0							0	0	0	0
Storage Bay Dist (ft)							350	350				500
Storage Blk Time (%)							0	7	57		6	25
Queuing Penalty (veh)							0	34	566		34	125

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB	NB
Directions Served	L	L	T	T	R	>	>
Maximum Queue (ft)	159	175	269	548	577	591	150
Average Queue (ft)	67	79	116	121	554	559	33
95th Queue (ft)	121	144	199	385	564	577	135
Link Distance (ft)	538	538	538	538	538	538	
Upstream Blk Time (%)			0	1	47	92	
Queuing Penalty (veh)			0	0	0	0	
Storage Bay Dist (ft)							100
Storage Blk Time (%)						71	
Queuing Penalty (veh)						375	

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	106	148	170	312	305	252	312
Average Queue (ft)	19	121	139	282	228	134	156
95th Queue (ft)	81	162	185	348	319	291	327
Link Distance (ft)	139	139	139	297	297	297	297
Upstream Blk Time (%)	0	1	3	21	6	4	11
Queuing Penalty (veh)	0	2	9	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 2568

HCM Signalized Intersection Capacity Analysis
38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

6/1/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	46	534	98	409	493	449	88	434	268	188	232	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	11	12	13	10	11	12	11	12	12
Total Lost time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Lane Util. Factor		0.95		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98		1.00	1.00	0.85	1.00	0.94		1.00	0.98	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3895		1697	1900	1662	1678	3277		1745	3533	
Flt Permitted		0.87		0.12	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		3389		217	1900	1662	1678	3277		1745	3533	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	50	580	107	445	536	488	96	472	291	204	252	29
RTOR Reduction (vph)	0	12	0	0	0	76	0	78	0	0	7	0
Lane Group Flow (vph)	0	726	0	445	536	412	96	685	0	204	274	0
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Bus Blockages (#/hr)	0	2	1	2	0	1	1	2	1	0	3	0
Turn Type	pm+pt	NA		pm+pt	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		28.0		58.0	58.0	80.0	11.1	24.0		22.0	34.9	
Effective Green, g (s)		28.0		58.0	58.0	80.0	11.1	24.0		22.0	34.9	
Actuated g/C Ratio		0.23		0.48	0.48	0.67	0.09	0.20		0.18	0.29	
Clearance Time (s)		5.0		5.0	5.0	5.0	5.0	6.0		5.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		790		413	918	1177	155	655		319	1027	
v/s Ratio Prot				c0.22	0.28	0.06	0.06	c0.21		c0.12	0.08	
v/s Ratio Perm		0.21		c0.30		0.18						
v/c Ratio		0.92		1.08	0.58	0.35	0.62	1.05		0.64	0.27	
Uniform Delay, d1		44.9		36.2	22.3	8.7	52.4	48.0		45.3	32.7	
Progression Factor		1.00		0.93	0.59	0.46	1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.4		62.7	0.8	0.1	7.2	47.5		4.2	0.6	
Delay (s)		60.3		96.3	13.9	4.2	59.6	95.5		49.5	33.3	
Level of Service		E		F	B	A	E	F		D	C	
Approach Delay (s)		60.3			35.6			91.5			40.1	
Approach LOS		E			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	999	970	0	1361	386
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	14	14	12	12	12
Total Lost time (s)		5.0	5.0		5.0	5.0
Lane Util. Factor		0.95	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		3851	3813		3433	1599
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		3851	3813		3433	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1086	1054	0	1479	420
RTOR Reduction (vph)	0	0	0	0	0	36
Lane Group Flow (vph)	0	1086	1054	0	1479	384
Heavy Vehicles (%)	0%	0%	1%	0%	2%	1%
Turn Type		NA	NA		Prot	custom
Protected Phases		4 8	4 8		1 2	1 2
Permitted Phases						
Actuated Green, G (s)		58.0	58.0		52.0	52.0
Effective Green, g (s)		58.0	58.0		46.0	46.0
Actuated g/C Ratio		0.48	0.48		0.38	0.38
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		1861	1842		1315	612
v/s Ratio Prot		c0.28	0.28		c0.43	0.24
v/s Ratio Perm						
v/c Ratio		0.58	0.57		1.12	0.63
Uniform Delay, d1		22.3	22.1		37.0	30.0
Progression Factor		1.10	1.00		1.00	1.00
Incremental Delay, d2		0.2	0.4		66.5	2.0
Delay (s)		24.7	22.6		103.5	32.0
Level of Service		C	C		F	C
Approach Delay (s)		24.7	22.6		87.7	
Approach LOS		C	C		F	

Intersection Summary			
HCM 2000 Control Delay	53.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBU	WBL	WBT	SBL	SBT	SBR	SWL2	SWL	SWR
Lane Configurations											
Volume (vph)	1925	169	100	1136	1688	597	483	71	144	323	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	0.76			0.94	0.91	0.94	0.95			0.91	
Frt	0.99			1.00	1.00	1.00	0.98			0.98	
Flt Protected	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (prot)	8118			4832	4916	4777	3380			6195	
Flt Permitted	1.00			0.95	1.00	0.95	1.00			0.96	
Satd. Flow (perm)	8118			4832	4916	4777	3380			6195	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2092	184	109	1235	1835	649	525	77	157	351	92
RTOR Reduction (vph)	8	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	2268	0	0	1344	1835	649	590	0	0	600	0
Heavy Vehicles (%)	2%	1%	0%	2%	2%	3%	1%	3%	1%	1%	2%
Turn Type	NA		Prot	Prot	NA	Split	NA		Prot	Prot	
Protected Phases	2		1	1	6	7	7		4	4	
Permitted Phases											
Actuated Green, G (s)	27.0			27.0	59.0	17.0	17.0			9.0	
Effective Green, g (s)	27.0			27.0	59.0	17.0	17.0			9.0	
Actuated g/C Ratio	0.27			0.27	0.59	0.17	0.17			0.09	
Clearance Time (s)	5.0			5.0	5.0	5.0	5.0			5.0	
Lane Grp Cap (vph)	2191			1304	2900	812	574			557	
v/s Ratio Prot	c0.28			c0.28	0.37	0.14	c0.17			c0.10	
v/s Ratio Perm											
v/c Ratio	1.04			1.03	0.63	0.80	1.03			1.08	
Uniform Delay, d1	36.5			36.5	13.4	39.9	41.5			45.5	
Progression Factor	1.00			0.61	0.39	1.00	1.00			0.85	
Incremental Delay, d2	29.0			25.8	0.5	8.1	45.1			57.9	
Delay (s)	65.5			48.2	5.7	48.0	86.6			96.4	
Level of Service	E			D	A	D	F			F	
Approach Delay (s)	65.5				23.7		66.5			96.4	
Approach LOS	E				C		E			F	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2
Lane Configurations											
Volume (vph)	4	74	258	2452	2512	594	76	479	1023	613	1223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lane Util. Factor			0.97	0.86	0.81	1.00		0.97	0.95	1.00	0.88
Frt			1.00	1.00	1.00	0.85		1.00	1.00	1.00	0.88
Flt Protected			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (prot)			3478	6408	7471	1615		3433	3539	1881	2830
Flt Permitted			0.95	1.00	1.00	1.00		0.95	1.00	1.00	1.00
Satd. Flow (perm)			3478	6408	7471	1615		3433	3539	1881	2830
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	80	280	2665	2730	646	83	521	1112	666	1329
RTOR Reduction (vph)	0	0	0	0	0	46	0	0	0	0	12
Lane Group Flow (vph)	0	0	364	2665	2730	683	0	521	1112	666	1317
Heavy Vehicles (%)	2%	3%	0%	2%	3%	0%	0%	2%	2%	1%	4%
Turn Type	Prot	Prot	Prot	NA	NA	Prot		Split	NA	Prot	custom
Protected Phases	5	5	5	2	6 7	6 7		8	8	8	7 8
Permitted Phases											
Actuated Green, G (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Effective Green, g (s)			12.0	44.0	39.0	39.0		34.0	34.0	34.0	46.0
Actuated g/C Ratio			0.12	0.44	0.39	0.39		0.34	0.34	0.34	0.46
Clearance Time (s)			5.0	5.0				5.0	5.0	5.0	
Lane Grp Cap (vph)			417	2819	2913	629		1167	1203	639	1301
v/s Ratio Prot			0.10	c0.42	0.37	c0.42		0.15	0.31	0.35	c0.47
v/s Ratio Perm											
v/c Ratio			0.87	0.95	0.94	1.09		0.45	0.92	1.04	1.01
Uniform Delay, d1			43.3	26.8	29.3	30.5		25.7	31.8	33.0	27.0
Progression Factor			1.32	0.23	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2			7.0	2.7	7.3	61.2		1.2	13.2	47.1	28.0
Delay (s)			64.2	9.0	36.6	91.7		26.9	44.9	80.1	55.0
Level of Service			E	A	D	F		C	D	F	E
Approach Delay (s)				15.6	48.2				52.5		
Approach LOS				B	D				D		

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	1578	0	0	0	0	0	0	0	0	529	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0									5.0	
Lane Util. Factor		0.91									0.86	
Frt		1.00									0.96	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5136									6305	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5136									6305	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1715	0	0	0	0	0	0	0	0	575	177
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	30	0
Lane Group Flow (vph)	0	1715	0	0	0	0	0	0	0	0	722	0
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA									NA	
Protected Phases		2									8	
Permitted Phases												
Actuated Green, G (s)		69.0									21.0	
Effective Green, g (s)		69.0									21.0	
Actuated g/C Ratio		0.69									0.21	
Clearance Time (s)		5.0									5.0	
Lane Grp Cap (vph)		3543									1324	
v/s Ratio Prot		c0.33									c0.11	
v/s Ratio Perm												
v/c Ratio		0.48									0.55	
Uniform Delay, d1		7.2									35.2	
Progression Factor		0.75									1.00	
Incremental Delay, d2		0.1									1.6	
Delay (s)		5.6									36.9	
Level of Service		A									D	
Approach Delay (s)		5.6			0.0			0.0			36.9	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 38: Mystic Avenue (Route 38) & Mystic Valley Parkway (Route 16)

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (ft)	542	536	200	300	288	124	414	433	159	235	199
Average Queue (ft)	368	332	191	241	63	86	241	258	124	114	78
95th Queue (ft)	593	564	219	348	172	158	384	410	175	217	160
Link Distance (ft)	554	554		263	263		1165	1165		1173	1173
Upstream Blk Time (%)	11	10		20	1						
Queuing Penalty (veh)	0	0		139	7						
Storage Bay Dist (ft)			150			75			110		
Storage Blk Time (%)			50	7		18	61		19	3	
Queuing Penalty (veh)			245	29		40	54		22	6	

Intersection: 39: Mystic Valley Parkway (Route 16) & Route 16 SB Connector

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	L	L	R
Maximum Queue (ft)	278	325	424	405	367	353	390
Average Queue (ft)	211	235	345	221	259	257	247
95th Queue (ft)	279	336	474	421	358	360	423
Link Distance (ft)	263	263	386	386	395	395	395
Upstream Blk Time (%)	2	6	25	3	0		8
Queuing Penalty (veh)	8	30	0	0	0		45
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	TR	UL	L	L	T	T	T
Maximum Queue (ft)	592	766	808	704	650	562	191	183	180	118	130	132
Average Queue (ft)	154	609	678	562	493	374	145	138	112	56	61	58
95th Queue (ft)	454	857	852	739	703	636	185	184	183	102	106	108
Link Distance (ft)	793	793	793	793	793	793	140	140	140	140	140	140
Upstream Blk Time (%)	0	4	10	6	4	4	9	6	3	0	0	0
Queuing Penalty (veh)	0	0	0	0	0	0	45	29	16	1	0	1
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 42: Mystic Valley Parkway (Route 16)/Mystic Valley Parkway & Middlesex Avenue

Movement	SB	SB	SB	SB	SB	SW	SW	SW	SW
Directions Served	L	L	L	T	TR	<L	L	L	LR
Maximum Queue (ft)	97	657	660	650	619	167	184	162	161
Average Queue (ft)	11	628	633	600	247	161	134	125	107
95th Queue (ft)	52	658	645	796	637	166	193	174	178
Link Distance (ft)		616	616	616	616	146	146	146	146
Upstream Blk Time (%)		78	98	47	0	39	11	9	7
Queuing Penalty (veh)		0	0	0	0	51	14	12	10
Storage Bay Dist (ft)	200								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	U<L	L	T	T	T	T	T	T	T	T	T	R>
Maximum Queue (ft)	168	158	144	160	95	126	271	252	275	281	271	273
Average Queue (ft)	109	86	60	61	37	50	181	145	152	225	234	265
95th Queue (ft)	161	147	115	115	72	101	287	258	325	318	320	275
Link Distance (ft)	140	140	140	140	140	140	250	250	250	250	250	
Upstream Blk Time (%)	10	2	0	0	0	0	5	2	11	18	20	73
Queuing Penalty (veh)	46	10	1	1	0	0	0	0	0	0	0	0
Storage Bay Dist (ft)												500
Storage Blk Time (%)											20	73
Queuing Penalty (veh)											131	367

Intersection: 142: Fellsway (Route 28) & Mystic Valley Parkway/Mystic Valley Parkway (Route 16)

Movement	NB	NB	NB	NB	NB	NB	NB
Directions Served	L	L	T	T	R	>	>
Maximum Queue (ft)	203	414	490	553	595	597	150
Average Queue (ft)	101	149	292	360	550	560	146
95th Queue (ft)	170	280	439	617	606	581	183
Link Distance (ft)	538	538	538	538	538	538	
Upstream Blk Time (%)		0	0	6	34	52	
Queuing Penalty (veh)		0	0	0	0	0	
Storage Bay Dist (ft)							100
Storage Blk Time (%)						45	2
Queuing Penalty (veh)						275	10

Intersection: 143: Middlesex Avenue & Fellsway (Route 28)

Movement	NB	NB	NB	SW	SW	SW	SW
Directions Served	T	T	T	T	T	T	TR
Maximum Queue (ft)	68	138	170	343	330	271	300
Average Queue (ft)	4	125	141	305	271	121	122
95th Queue (ft)	33	165	184	397	396	301	283
Link Distance (ft)	139	139	139	330	330	330	330
Upstream Blk Time (%)		0	3	45	26	1	1
Queuing Penalty (veh)		3	16	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Zone Summary

Zone wide Queuing Penalty: 1663

Appendix F

OTHER TRANSPORTATION INFORMATION

Appendix F

Other Transportation Information

F1. Lower Broadway Signal Timing Information

F2. Assembly Row ATR Counts

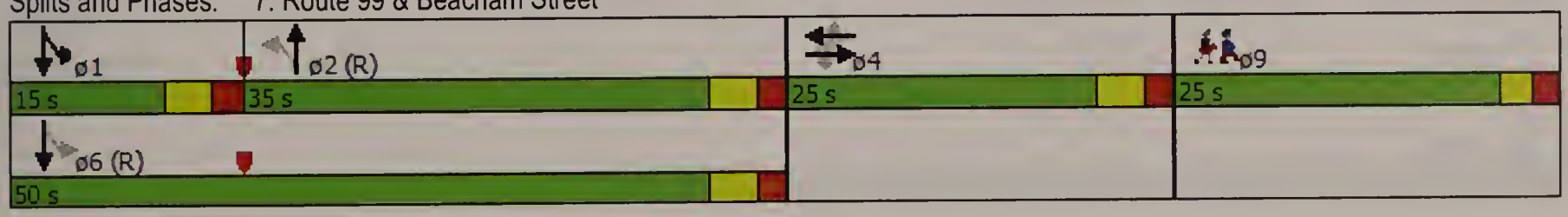
Lower Broadway Signal Timing Information

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	34	2	46	257	16	34	1237	63	984		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		20.0	20.0		20.0		34.2		65.0		
Actuated g/C Ratio		0.20	0.20		0.20		0.34		0.65		
v/c Ratio		0.17	0.15		1.25		1.16		0.60		
Control Delay		34.9	1.4		175.8		113.2		16.8		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		34.9	1.4		175.8		113.2		16.8		
LOS		C	A		F		F		B		
Approach Delay		16.1			175.8		113.2		16.8		
Approach LOS		B			F		F		B		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.25
Intersection Signal Delay: 78.7 Intersection LOS: E
Intersection Capacity Utilization 102.3% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

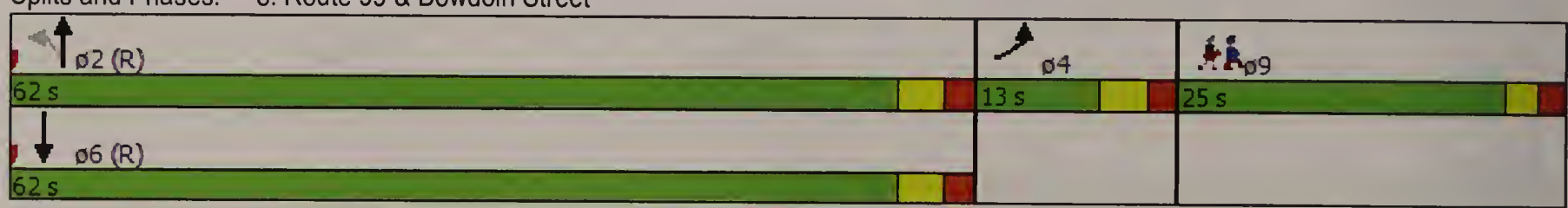


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	22	14	1298	1066	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	8.0		84.2	84.2	
Actuated g/C Ratio	0.08		0.84	0.84	
v/c Ratio	0.28		0.50	0.40	
Control Delay	34.1		5.6	5.3	
Queue Delay	0.0		0.0	0.0	
Total Delay	34.1		5.6	5.3	
LOS	C		A	A	
Approach Delay	34.1		5.6	5.3	
Approach LOS	C		A	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 6.0 Intersection LOS: A
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

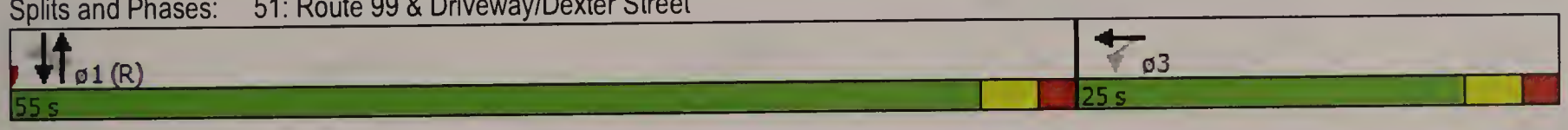


Lane Group	WBT	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	0	1487	8	1282
Turn Type	NA	NA	Perm	NA
Protected Phases	3	1		1
Permitted Phases			1	
Detector Phase	3	1	1	1
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0
Total Split (s)	25.0	55.0	55.0	55.0
Total Split (%)	31.3%	68.8%	68.8%	68.8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.5	54.5		54.5
Actuated g/C Ratio	0.19	0.68		0.68
v/c Ratio	0.71	0.67		0.54
Control Delay	36.7	9.9		7.9
Queue Delay	0.0	0.0		0.0
Total Delay	36.7	9.9		7.9
LOS	D	A		A
Approach Delay	36.7	9.9		7.9
Approach LOS	D	A		A

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 65.5% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

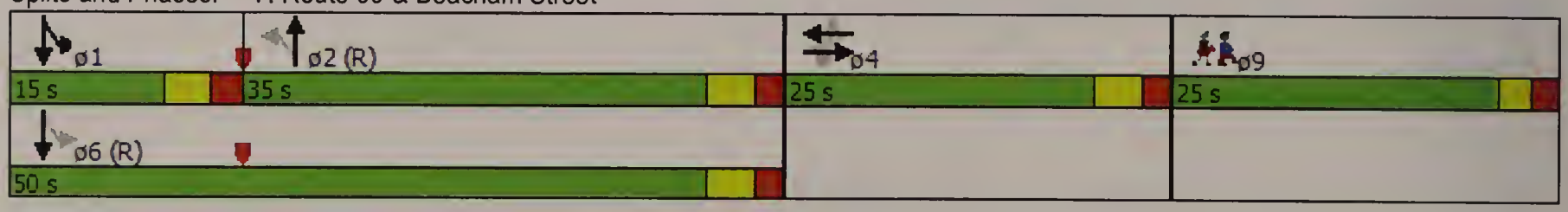


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	23	9	53	237	15	34	966	32	1170		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		20.0	20.0		20.0		35.2		65.0		
Actuated g/C Ratio		0.20	0.20		0.20		0.35		0.65		
v/c Ratio		0.12	0.15		1.16		0.94		0.56		
Control Delay		34.1	1.2		141.7		48.8		15.2		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		34.1	1.2		141.7		48.8		15.2		
LOS		C	A		F		D		B		
Approach Delay		13.5			141.7		48.8		15.2		
Approach LOS		B			F		D		B		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 42.2 Intersection LOS: D
Intersection Capacity Utilization 87.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

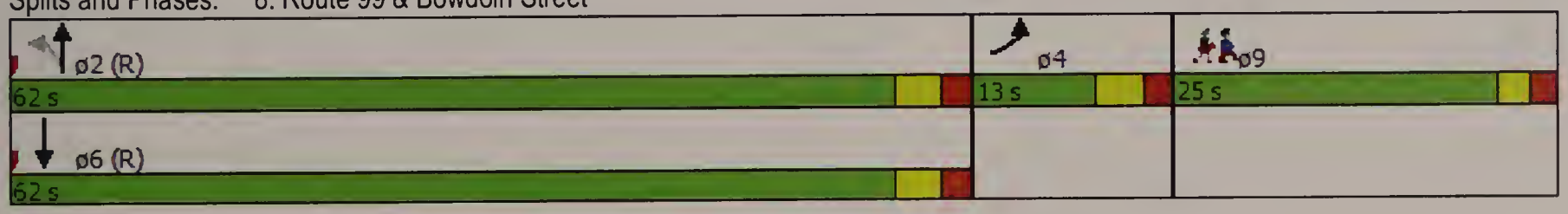


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	17	16	1006	1227	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	8.0		80.6	80.6	
Actuated g/C Ratio	0.08		0.81	0.81	
v/c Ratio	0.29		0.42	0.44	
Control Delay	29.3		2.4	5.9	
Queue Delay	0.0		0.0	0.0	
Total Delay	29.3		2.4	5.9	
LOS	C		A	A	
Approach Delay	29.3		2.4	5.9	
Approach LOS	C		A	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.44
Intersection Signal Delay: 4.8 Intersection LOS: A
Intersection Capacity Utilization 54.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

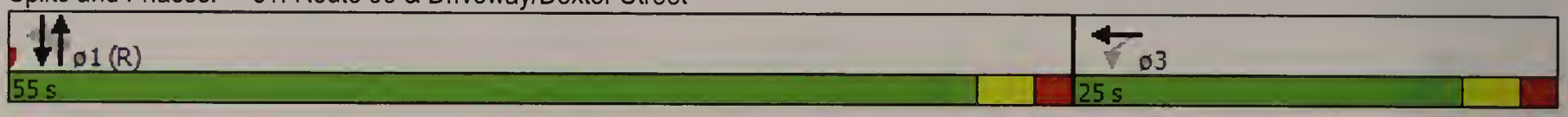


Lane Group	WBT	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	0	1078	3	1439
Turn Type	NA	NA	Perm	NA
Protected Phases	3	1		1
Permitted Phases			1	
Detector Phase	3	1	1	1
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0
Total Split (s)	25.0	55.0	55.0	55.0
Total Split (%)	31.3%	68.8%	68.8%	68.8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	11.3	58.7		58.7
Actuated g/C Ratio	0.14	0.73		0.73
v/c Ratio	0.55	0.48		0.54
Control Delay	33.2	5.4		6.0
Queue Delay	0.0	0.0		0.0
Total Delay	33.2	5.4		6.0
LOS	C	A		A
Approach Delay	33.2	5.4		6.0
Approach LOS	C	A		A

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 7.3 Intersection LOS: A
Intersection Capacity Utilization 58.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

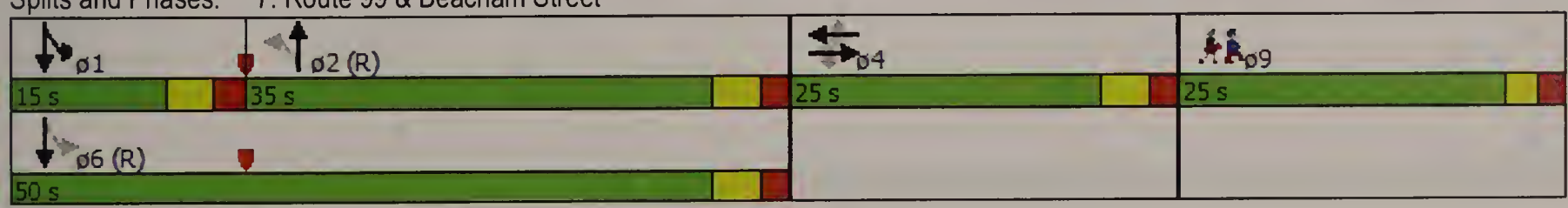


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	36	2	48	267	17	36	1486	66	1208		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		20.0	20.0		20.0		30.0		65.0		
Actuated g/C Ratio		0.20	0.20		0.20		0.30		0.65		
v/c Ratio		0.13	0.12		1.28		1.88		0.81		
Control Delay		34.4	0.6		186.9		427.1		21.1		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		34.4	0.6		186.9		427.1		21.1		
LOS		C	A		F		F		C		
Approach Delay		15.5			186.9		427.1		21.1		
Approach LOS		B			F		F		C		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.88
Intersection Signal Delay: 228.7 Intersection LOS: F
Intersection Capacity Utilization 116.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

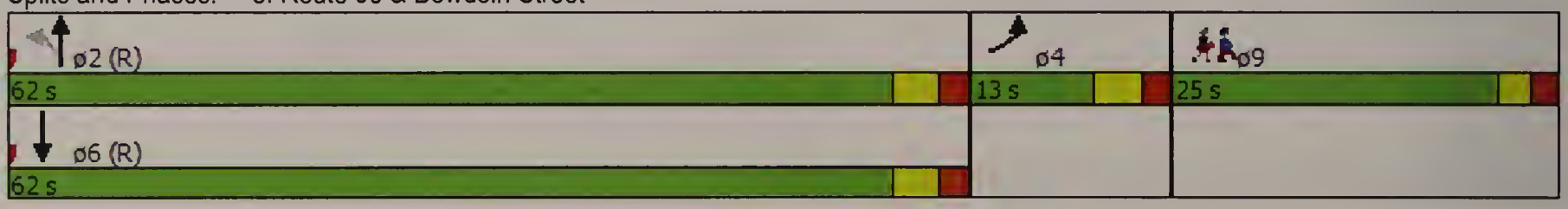


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	45	77	1487	1261	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	8.0		80.6	80.6	
Actuated g/C Ratio	0.08		0.81	0.81	
v/c Ratio	0.57		0.80	0.50	
Control Delay	39.9		23.6	6.6	
Queue Delay	0.0		0.0	0.0	
Total Delay	39.9		23.6	6.6	
LOS	D		C	A	
Approach Delay	39.9		23.6	6.6	
Approach LOS	D		C	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 99.0% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

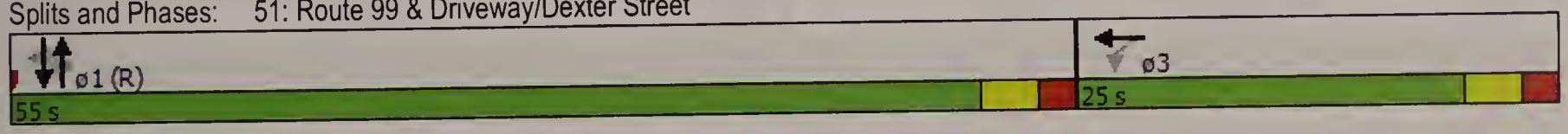


Lane Group	WBT	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	0	1746	8	1533
Turn Type	NA	NA	Perm	NA
Protected Phases	3	1		1
Permitted Phases			1	
Detector Phase	3	1	1	1
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0
Total Split (s)	25.0	55.0	55.0	55.0
Total Split (%)	31.3%	68.8%	68.8%	68.8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	15.2	54.8		54.8
Actuated g/C Ratio	0.19	0.68		0.68
v/c Ratio	0.70	0.79		0.71
Control Delay	36.3	13.0		10.9
Queue Delay	0.0	0.0		0.0
Total Delay	36.3	13.0		10.9
LOS	D	B		B
Approach Delay	36.3	13.0		10.9
Approach LOS	D	B		B

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 73.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

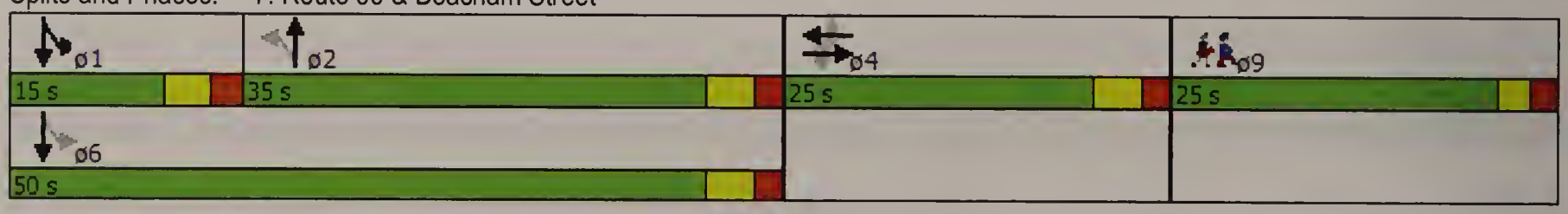


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	23	9	56	248	16	37	1129	34	1320		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None	None	None		None	None
Act Effct Green (s)		20.3	20.3		20.3		30.4		45.6		
Actuated g/C Ratio		0.25	0.25		0.25		0.38		0.57		
v/c Ratio		0.09	0.12		0.96		1.16		0.93		
Control Delay		26.9	0.6		73.1		109.2		27.8		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		26.9	0.6		73.1		109.2		27.8		
LOS		C	A		E		F		C		
Approach Delay		10.2			73.1		109.2		27.8		
Approach LOS		B			E		F		C		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 80
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 65.0 Intersection LOS: E
Intersection Capacity Utilization 94.2% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

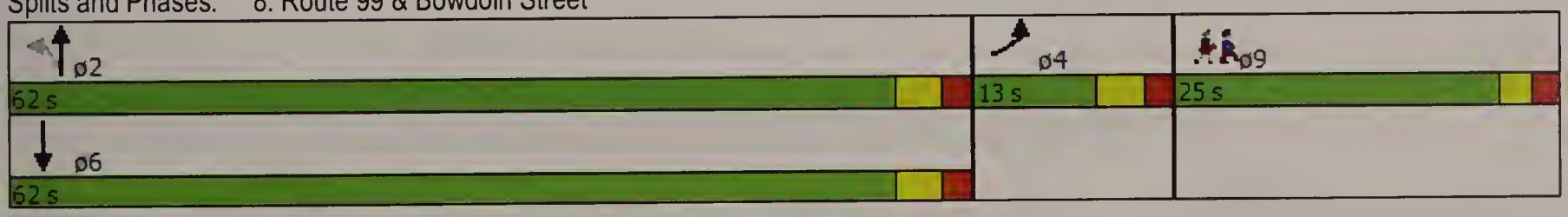


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	43	61	1126	1342	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	None
Act Effct Green (s)	9.0		46.3	46.3	
Actuated g/C Ratio	0.14		0.73	0.73	
v/c Ratio	0.38		0.62	0.54	
Control Delay	24.0		9.6	7.8	
Queue Delay	0.0		0.0	0.0	
Total Delay	24.0		9.6	7.8	
LOS	C		A	A	
Approach Delay	24.0		9.6	7.8	
Approach LOS	C		A	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 63.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

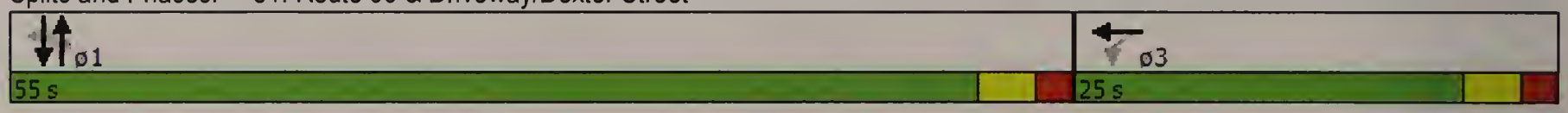


Lane Group	WBT	NBT	SBL	SBT
Lane Configurations				
Volume (vph)	0	1236	3	1602
Turn Type	NA	NA	Perm	NA
Protected Phases	3	1		1
Permitted Phases			1	
Detector Phase	3	1	1	1
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	8.0
Minimum Split (s)	25.0	25.0	25.0	25.0
Total Split (s)	25.0	55.0	55.0	55.0
Total Split (%)	31.3%	68.8%	68.8%	68.8%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	5.0	5.0		5.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)	10.9	50.0		50.0
Actuated g/C Ratio	0.15	0.71		0.71
v/c Ratio	0.53	0.56		0.71
Control Delay	29.4	6.5		8.9
Queue Delay	0.0	0.0		0.0
Total Delay	29.4	6.5		8.9
LOS	C	A		A
Approach Delay	29.4	6.5		8.9
Approach LOS	C	A		A

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 70.9
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 9.0 Intersection LOS: A
Intersection Capacity Utilization 63.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

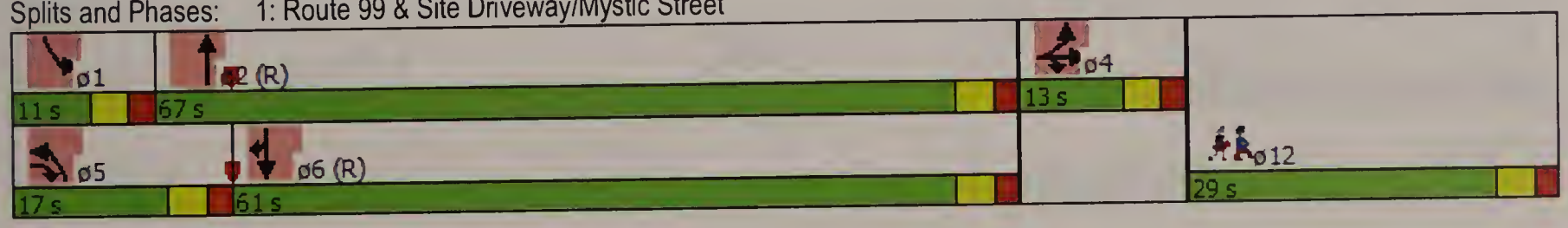


Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø12
Lane Configurations									
Volume (vph)	187	0	487	429	1549	39	1541	259	
Turn Type	Split	NA	pt+ov	Prot	NA	Prot	NA	Prot	
Protected Phases	4	4	4 5	5	2	1	6	6	12
Permitted Phases									
Detector Phase	4	4	4 5	5	2	1	6	6	
Switch Phase									
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		13.0	13.0	11.0	13.0	13.0	29.0
Total Split (s)	13.0	13.0		17.0	67.0	11.0	61.0	61.0	29.0
Total Split (%)	10.8%	10.8%		14.2%	55.8%	9.2%	50.8%	50.8%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag				Lead	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	C-Max	None	C-Max	C-Max	None
Act Effct Green (s)	8.0	8.0	40.2	28.2	88.5	7.3	63.0	63.0	
Actuated g/C Ratio	0.07	0.07	0.34	0.24	0.74	0.06	0.52	0.52	
v/c Ratio	0.90	0.91	0.57	0.60	0.77	0.38	0.87	0.33	
Control Delay	117.8	119.7	35.6	54.6	11.1	65.0	31.4	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.0	0.5	0.0	
Total Delay	117.8	119.7	35.6	54.6	11.8	65.0	32.0	17.9	
LOS	F	F	D	D	B	E	C	B	
Approach Delay		58.7			20.2		30.7		
Approach LOS		E			C		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 29.8 Intersection LOS: C
Intersection Capacity Utilization 74.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Route 99 & Site Driveway/Mystic Street

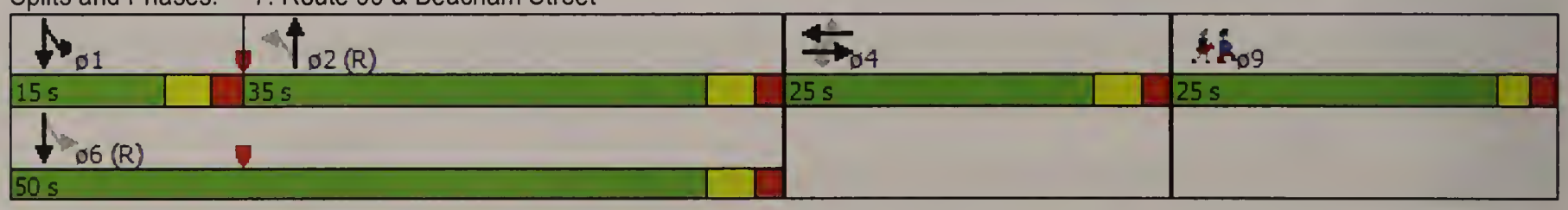


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	36	2	48	283	17	36	1660	66	1453		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		20.0	20.0		20.0		30.0		65.0		
Actuated g/C Ratio		0.20	0.20		0.20		0.30		0.65		
v/c Ratio		0.13	0.12		1.36		2.17		0.96		
Control Delay		34.3	0.6		216.1		552.6		33.1		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		34.3	0.6		216.1		552.6		33.1		
LOS		C	A		F		F		C		
Approach Delay		15.4			216.1		552.6		33.1		
Approach LOS		B			F		F		C		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.17
Intersection Signal Delay: 290.9 Intersection LOS: F
Intersection Capacity Utilization 124.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

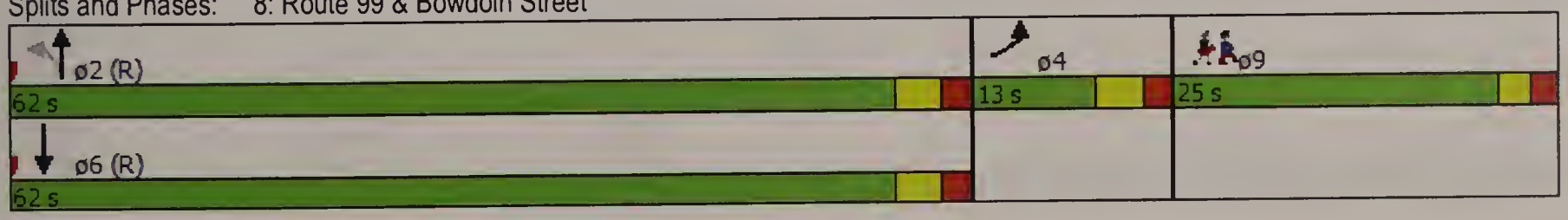


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	45	77	1661	1506	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	8.0		80.6	80.6	
Actuated g/C Ratio	0.08		0.81	0.81	
v/c Ratio	0.57		0.94	0.59	
Control Delay	39.9		30.9	7.8	
Queue Delay	0.0		0.0	0.0	
Total Delay	39.9		30.9	7.8	
LOS	D		C	A	
Approach Delay	39.9		30.9	7.8	
Approach LOS	D		C	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 110.6% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

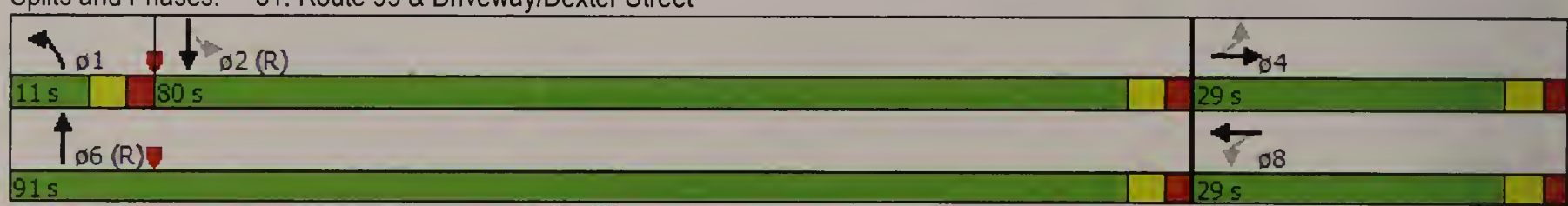


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	245	0	2175	8	2020		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	13.0	13.0	25.0	25.0	25.0	11.0	13.0
Total Split (s)	29.0	29.0	91.0	80.0	80.0	11.0	29.0
Total Split (%)	24.2%	24.2%	75.8%	66.7%	66.7%	9%	24%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		21.0	89.0		89.0		
Actuated g/C Ratio		0.18	0.74		0.74		
v/c Ratio		0.87	0.94		0.89		
Control Delay		62.4	22.9		12.9		
Queue Delay		0.0	3.0		0.0		
Total Delay		62.4	25.9		12.9		
LOS		E	C		B		
Approach Delay		62.4	25.9		12.9		
Approach LOS		E	C		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 109 (91%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 22.4 Intersection LOS: C
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

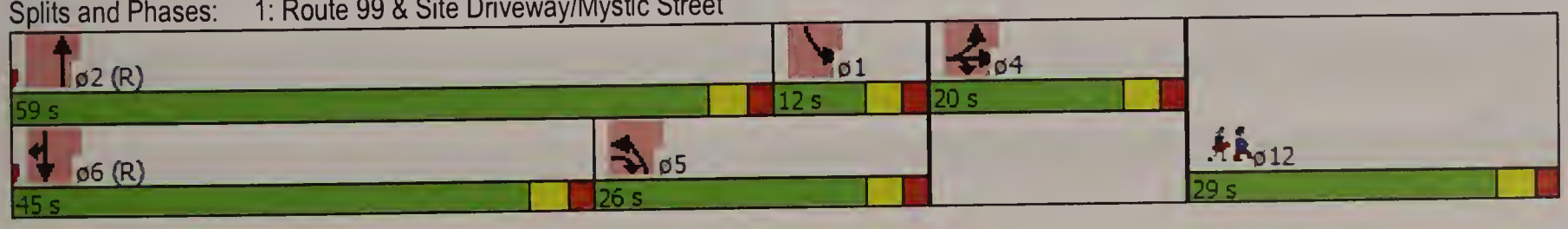


Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø12
Lane Configurations									
Volume (vph)	222	0	572	512	1140	40	1605	314	
Turn Type	Split	NA	pt+ov	Prot	NA	Prot	NA	Prot	
Protected Phases	4	4	4 5	5	2	1	6	6	12
Permitted Phases									
Detector Phase	4	4	4 5	5	2	1	6	6	
Switch Phase									
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		13.0	13.0	11.0	13.0	13.0	29.0
Total Split (s)	20.0	20.0		26.0	59.0	12.0	45.0	45.0	29.0
Total Split (%)	16.7%	16.7%		21.7%	49.2%	10.0%	37.5%	37.5%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag				Lag	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	C-Max	None	C-Max	C-Max	None
Act Effct Green (s)	13.6	13.6	39.6	21.0	81.0	6.8	64.6	64.6	
Actuated g/C Ratio	0.11	0.11	0.33	0.18	0.68	0.06	0.54	0.54	
v/c Ratio	0.63	0.64	0.68	0.96	0.59	0.42	0.88	0.35	
Control Delay	65.6	65.9	38.8	76.0	10.1	67.9	32.3	9.5	
Queue Delay	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	65.6	65.9	41.8	76.0	10.1	67.9	32.3	9.5	
LOS	E	E	D	E	B	E	C	A	
Approach Delay		48.5			29.4		29.3		
Approach LOS		D			C		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 32.8 Intersection LOS: C
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Route 99 & Site Driveway/Mystic Street

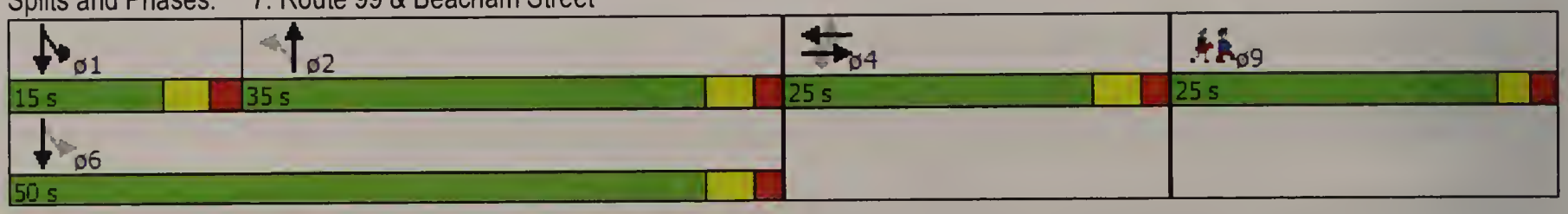


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	30	13	56	265	20	36	1335	34	1615		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	None	None	None		None	None
Act Effct Green (s)		20.3	20.3		20.3		30.4		45.6		
Actuated g/C Ratio		0.25	0.25		0.25		0.38		0.57		
v/c Ratio		0.12	0.12		1.04		1.65		1.18		
Control Delay		27.1	0.6		92.9		319.5		105.5		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		27.1	0.6		92.9		319.5		105.5		
LOS		C	A		F		F		F		
Approach Delay		12.1			92.9		319.5		105.5		
Approach LOS		B			F		F		F		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 80
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.65
Intersection Signal Delay: 189.0 Intersection LOS: F
Intersection Capacity Utilization 103.6% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

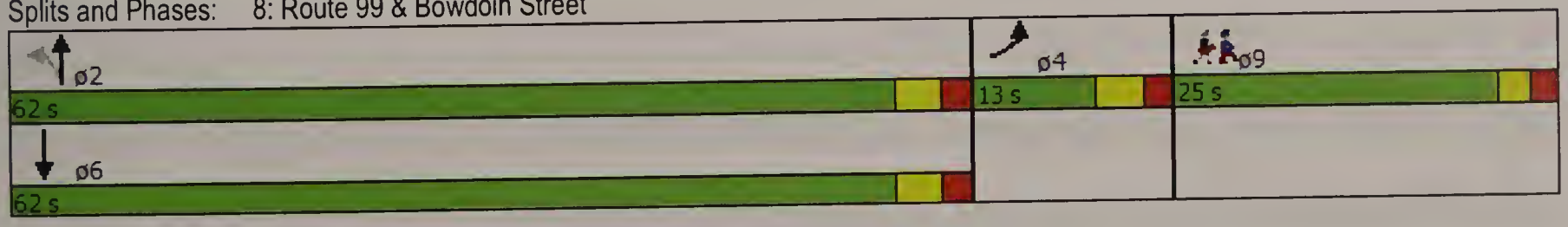


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	43	61	1325	1644	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	None
Act Effct Green (s)	8.2		59.6	59.6	
Actuated g/C Ratio	0.11		0.77	0.77	
v/c Ratio	0.48		0.75	0.62	
Control Delay	28.8		12.7	8.7	
Queue Delay	0.0		0.0	0.0	
Total Delay	28.8		12.7	8.7	
LOS	C		B	A	
Approach Delay	28.8		12.7	8.7	
Approach LOS	C		B	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 77.4
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.2 — Intersection LOS: B
Intersection Capacity Utilization 96.6% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

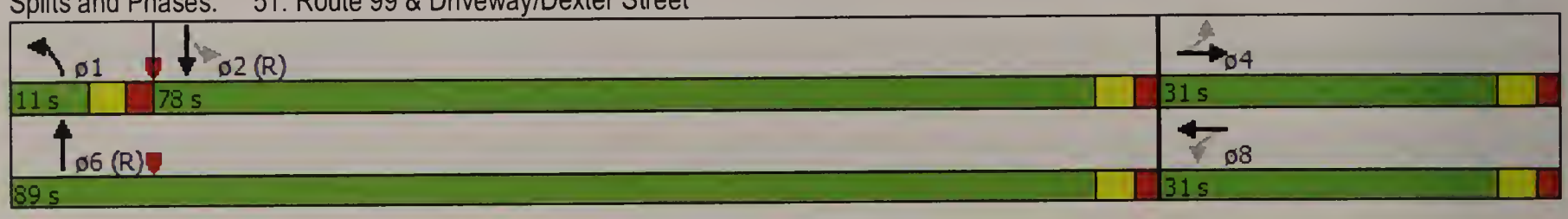


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	159	0	1748	3	2174		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	31.0	31.0	25.0	25.0	25.0	11.0	31.0
Total Split (s)	31.0	31.0	89.0	78.0	78.0	11.0	31.0
Total Split (%)	25.8%	25.8%	74.2%	65.0%	65.0%	9%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		15.5	94.5		94.5		
Actuated g/C Ratio		0.13	0.79		0.79		
v/c Ratio		0.70	0.51		0.87		
Control Delay		44.8	5.7		13.7		
Queue Delay		0.0	0.0		0.3		
Total Delay		44.8	5.7		14.1		
LOS		D	A		B		
Approach Delay		44.8	5.7		14.1		
Approach LOS		D	A		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 113 (94%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

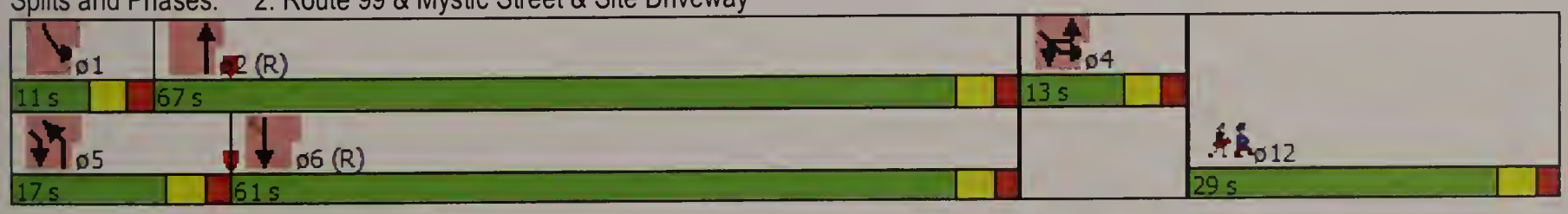


Lane Group	NBL	NBT	SBL	SBT	SBR	SEL2	SEL	SER	ø12
Lane Configurations									
Volume (vph)	245	1549	39	1541	151	110	0	278	
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Prot	pt+ov	
Protected Phases	5	2	1	6		4	4	4 5	12
Permitted Phases					6				
Detector Phase	5	2	1	6	6	4	4	4 5	
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	8.0	8.0		8.0
Minimum Split (s)	13.0	13.0	11.0	13.0	13.0	13.0	13.0		29.0
Total Split (s)	17.0	67.0	11.0	61.0	61.0	13.0	13.0		29.0
Total Split (%)	14.2%	55.8%	9.2%	50.8%	50.8%	10.8%	10.8%		24%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Lead/Lag	Lead	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	None	C-Max	C-Max	None	None		None
Act Effct Green (s)	13.8	88.5	7.3	77.4	77.4	8.0	8.0	25.8	
Actuated g/C Ratio	0.12	0.74	0.06	0.64	0.64	0.07	0.07	0.22	
v/c Ratio	0.70	0.77	0.38	0.71	0.15	0.54	0.54	0.50	
Control Delay	69.0	8.0	65.0	18.4	2.6	72.1	72.1	41.0	
Queue Delay	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.1	
Total Delay	69.0	8.3	65.0	18.5	2.6	72.1	72.1	41.1	
LOS	E	A	E	B	A	E	E	D	
Approach Delay		15.7		18.1			49.9		
Approach LOS		B		B			D		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Route 99 & Mystic Street & Site Driveway

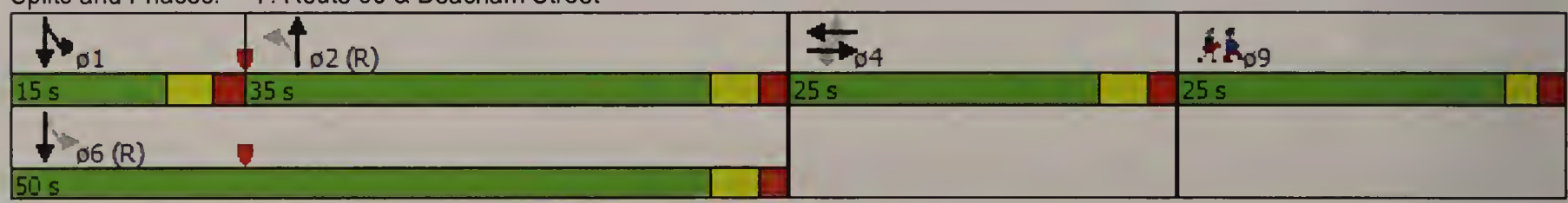


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	36	2	48	277	17	36	1588	66	1351		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	35.0	35.0	15.0		50.0	25.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	35.0%	35.0%	15.0%		50%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0				
Total Lost Time (s)		5.0	5.0		5.0		5.0				
Lead/Lag						Lag	Lag	Lead			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		20.0	20.0		20.0		30.0		65.0		
Actuated g/C Ratio		0.20	0.20		0.20		0.30		0.65		
v/c Ratio		0.13	0.12		1.32		2.05		0.90		
Control Delay		34.3	0.6		202.9		498.5		25.9		
Queue Delay		0.0	0.0		0.0		0.0		0.0		
Total Delay		34.3	0.6		202.9		498.5		25.9		
LOS		C	A		F		F		C		
Approach Delay		15.5			202.9		498.5		25.9		
Approach LOS		B			F		F		C		

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.05
Intersection Signal Delay: 263.3 Intersection LOS: F
Intersection Capacity Utilization 121.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

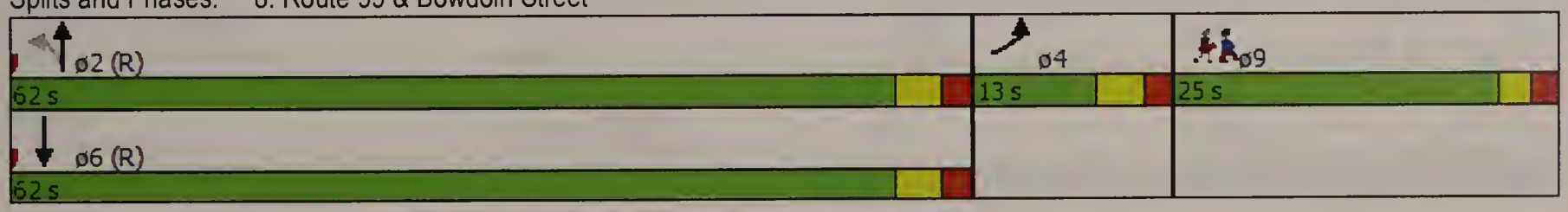


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	45	77	1589	1404	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	25.0
Total Split (s)	13.0	62.0	62.0	62.0	25.0
Total Split (%)	13.0%	62.0%	62.0%	62.0%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0		0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	8.0		80.6	80.6	
Actuated g/C Ratio	0.08		0.81	0.81	
v/c Ratio	0.57		0.87	0.55	
Control Delay	39.9		27.4	7.2	
Queue Delay	0.0		0.0	0.0	
Total Delay	39.9		27.4	7.2	
LOS	D		C	A	
Approach Delay	39.9		27.4	7.2	
Approach LOS	D		C	A	

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 105.8% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

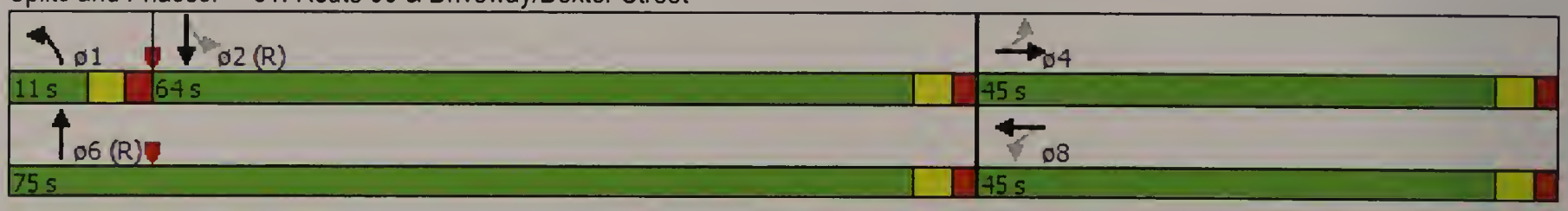


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	245	0	1991	8	1811		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	13.0	13.0	25.0	25.0	25.0	11.0	13.0
Total Split (s)	45.0	45.0	75.0	64.0	64.0	11.0	45.0
Total Split (%)	37.5%	37.5%	62.5%	53.3%	53.3%	9%	38%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		23.0	87.0		87.0		
Actuated g/C Ratio		0.19	0.72		0.72		
v/c Ratio		0.81	0.88		0.80		
Control Delay		52.4	19.7		11.9		
Queue Delay		0.0	0.6		0.0		
Total Delay		52.4	20.3		11.9		
LOS		D	C		B		
Approach Delay		52.4	20.3		11.9		
Approach LOS		D	C		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 114 (95%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 80.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

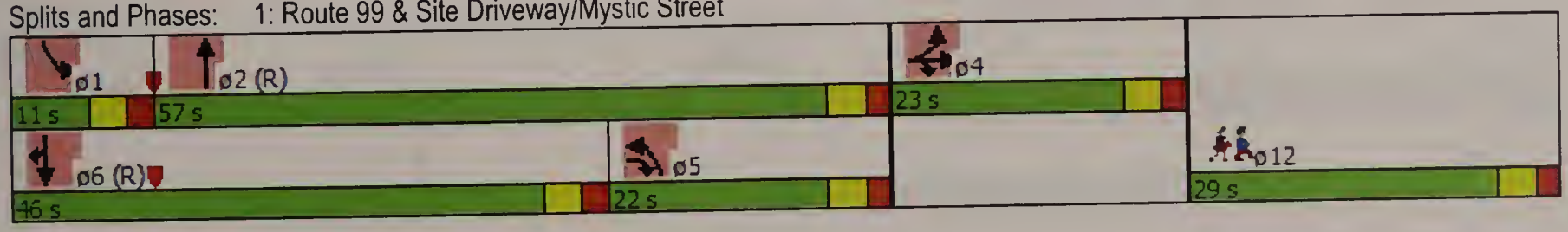


Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø12
Lane Configurations									
Volume (vph)	187	0	487	429	1549	39	1541	259	
Turn Type	Split	NA	pt+ov	Prot	NA	Prot	NA	Prot	
Protected Phases	4	4	4 5	5	2	1	6	6	12
Permitted Phases									
Detector Phase	4	4	4 5	5	2	1	6	6	
Switch Phase									
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		13.0	13.0	11.0	13.0	13.0	29.0
Total Split (s)	23.0	23.0		22.0	57.0	11.0	46.0	46.0	29.0
Total Split (%)	19.2%	19.2%		18.3%	47.5%	9.2%	38.3%	38.3%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag				Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	C-Max	None	C-Max	C-Max	None
Act Effct Green (s)	13.8	13.8	35.8	17.0	82.7	7.3	68.4	68.4	
Actuated g/C Ratio	0.12	0.12	0.30	0.14	0.69	0.06	0.57	0.57	
v/c Ratio	0.52	0.53	0.64	0.99	0.83	0.38	0.80	0.30	
Control Delay	58.8	59.0	39.8	63.6	9.5	53.1	27.2	16.2	
Queue Delay	0.0	0.0	1.2	0.0	1.2	0.0	1.2	0.0	
Total Delay	58.8	59.0	41.0	63.6	10.8	53.1	28.5	16.2	
LOS	E	E	D	E	B	D	C	B	
Approach Delay		46.0			21.1		27.2		
Approach LOS		D			C		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 27.1 Intersection LOS: C
Intersection Capacity Utilization 74.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Route 99 & Site Driveway/Mystic Street

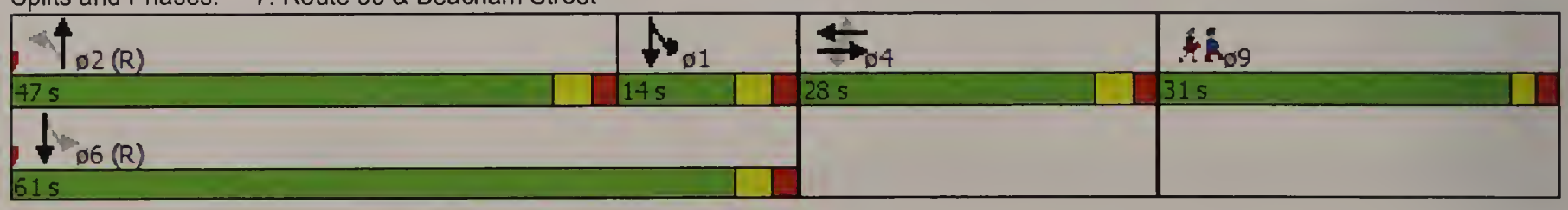


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	36	2	48	283	17	36	1660	66	1453		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	31.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	47.0	47.0	14.0		61.0	31.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	39.2%	39.2%	11.7%		51%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0			
Lead/Lag						Lead	Lead	Lag			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		23.0	23.0		23.0	66.8	66.8	80.8	80.8		
Actuated g/C Ratio		0.19	0.19		0.19	0.56	0.56	0.67	0.67		
v/c Ratio		0.14	0.13		1.42	0.52	0.95	0.39	0.70		
Control Delay		41.8	1.2		244.7	34.7	29.3	29.9	13.8		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		41.8	1.2		244.7	34.7	29.3	29.9	13.9		
LOS		D	A		F	C	C	C	B		
Approach Delay		19.1			244.7		29.4		14.5		
Approach LOS		B			F		C		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 45 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.42
Intersection Signal Delay: 42.1 Intersection LOS: D
Intersection Capacity Utilization 89.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

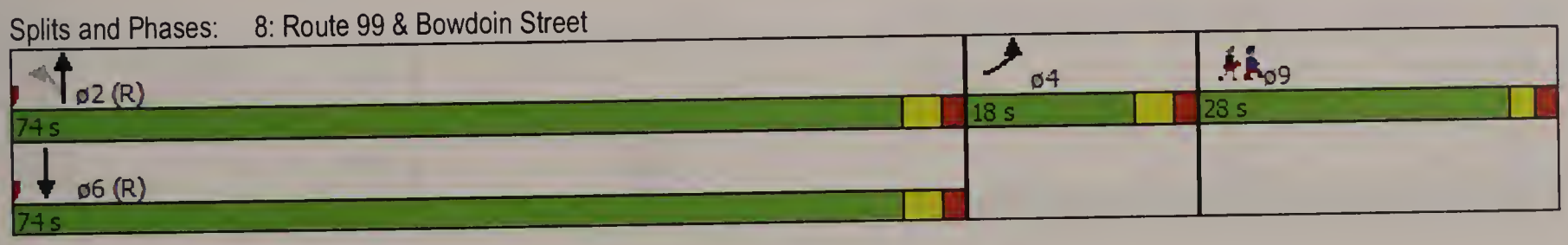


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	45	77	1661	1506	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	28.0
Total Split (s)	18.0	74.0	74.0	74.0	28.0
Total Split (%)	15.0%	61.7%	61.7%	61.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.1	94.3	94.3	94.3	
Actuated g/C Ratio	0.08	0.79	0.79	0.79	
v/c Ratio	0.56	0.52	0.64	0.61	
Control Delay	45.6	15.7	6.4	9.0	
Queue Delay	0.0	0.0	0.2	0.1	
Total Delay	45.6	15.7	6.7	9.1	
LOS	D	B	A	A	
Approach Delay	45.6		7.1	9.1	
Approach LOS	D		A	A	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 44 (37%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 9.1 — Intersection LOS: A
Intersection Capacity Utilization 69.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

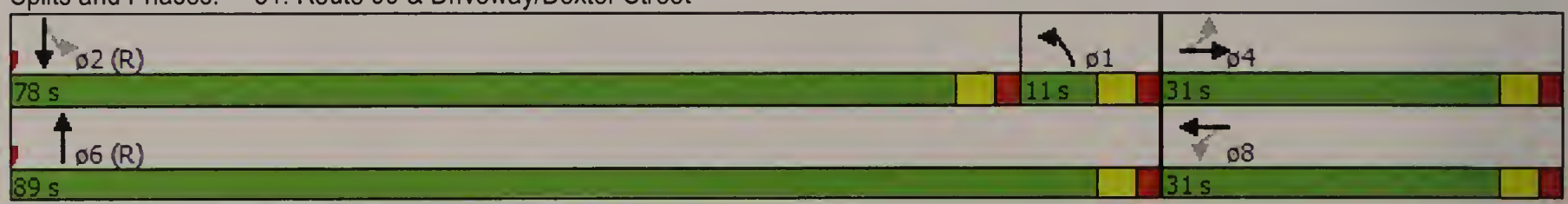


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	245	0	2175	8	2020		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	31.0	31.0	25.0	25.0	25.0	11.0	31.0
Total Split (s)	31.0	31.0	89.0	78.0	78.0	11.0	31.0
Total Split (%)	25.8%	25.8%	74.2%	65.0%	65.0%	9%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lead	Lead	Lag	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		21.6	88.4		88.4		
Actuated g/C Ratio		0.18	0.74		0.74		
v/c Ratio		0.85	0.96		0.92		
Control Delay		59.3	26.0		22.4		
Queue Delay		0.0	9.8		0.7		
Total Delay		59.3	35.7		23.1		
LOS		E	D		C		
Approach Delay		59.3	35.7		23.1		
Approach LOS		E	D		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

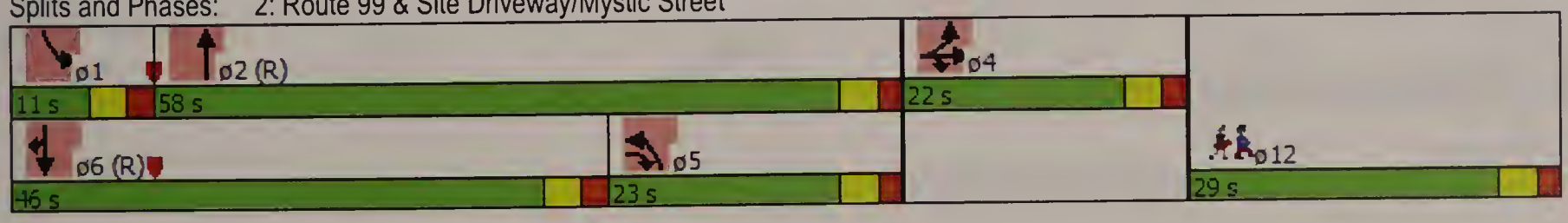


Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø12
Lane Configurations									
Volume (vph)	222	0	572	512	1140	32	1610	311	
Turn Type	Split	NA	pt+ov	Prot	NA	Prot	NA	Prot	
Protected Phases	4	4	4 5	5	2	1	6	6	12
Permitted Phases									
Detector Phase	4	4	4 5	5	2	1	6	6	
Switch Phase									
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		13.0	13.0	11.0	13.0	13.0	29.0
Total Split (s)	22.0	22.0		23.0	58.0	11.0	46.0	46.0	29.0
Total Split (%)	18.3%	18.3%		19.2%	48.3%	9.2%	38.3%	38.3%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag				Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	C-Max	None	C-Max	C-Max	None
Act Effct Green (s)	14.7	14.7	37.7	18.0	81.9	7.1	66.5	66.5	
Actuated g/C Ratio	0.12	0.12	0.31	0.15	0.68	0.06	0.55	0.55	
v/c Ratio	0.57	0.58	0.73	1.10	0.58	0.35	0.91	0.36	
Control Delay	60.2	60.4	42.1	105.1	7.7	64.5	25.7	3.3	
Queue Delay	0.0	0.0	9.1	0.0	0.2	0.0	0.0	0.0	
Total Delay	60.2	60.4	51.2	105.1	7.9	64.5	25.7	3.3	
LOS	E	E	D	F	A	E	C	A	
Approach Delay		53.8			36.3		22.8		
Approach LOS		D			D		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Route 99 & Site Driveway/Mystic Street

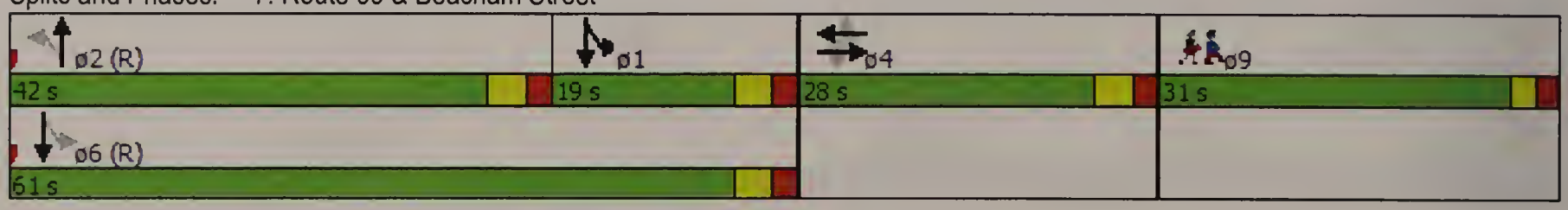


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	30	13	56	265	20	36	1335	34	1615		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	31.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	42.0	42.0	19.0		61.0	31.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	35.0%	35.0%	15.8%		51%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0			
Lead/Lag						Lead	Lead	Lag			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		23.0	23.0		23.0	61.8	61.8	80.8	80.8		
Actuated g/C Ratio		0.19	0.19		0.19	0.52	0.52	0.67	0.67		
v/c Ratio		0.15	0.16		1.34	0.61	0.83	0.14	0.78		
Control Delay		41.9	2.9		216.0	60.7	29.3	19.9	16.3		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		41.9	2.9		216.0	60.7	29.3	19.9	16.3		
LOS		D	A		F	E	C	B	B		
Approach Delay		19.9			216.0		30.1		16.4		
Approach LOS		B			F		C		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 65 (54%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 40.1 Intersection LOS: D
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: Route 99 & Beacham Street

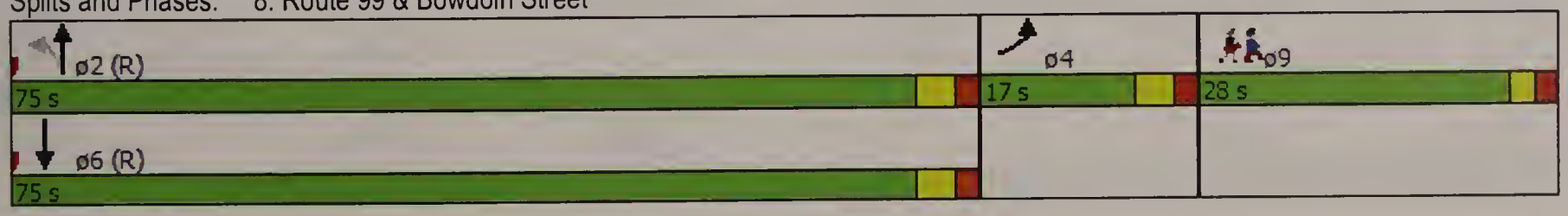


Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	43	61	1325	1644	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	28.0
Total Split (s)	17.0	75.0	75.0	75.0	28.0
Total Split (%)	14.2%	62.5%	62.5%	62.5%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.0	94.4	94.4	94.4	
Actuated g/C Ratio	0.08	0.79	0.79	0.79	
v/c Ratio	0.59	0.52	0.51	0.66	
Control Delay	44.5	21.6	3.0	9.8	
Queue Delay	0.1	0.0	0.2	0.1	
Total Delay	44.6	21.6	3.2	9.9	
LOS	D	C	A	A	
Approach Delay	44.6		4.0	9.9	
Approach LOS	D		A	A	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

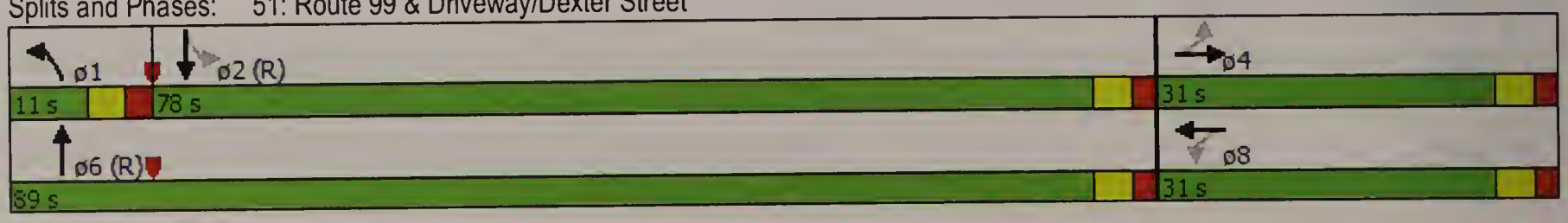


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	159	0	1748	3	2174		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	31.0	31.0	25.0	25.0	25.0	11.0	31.0
Total Split (s)	31.0	31.0	89.0	78.0	78.0	11.0	31.0
Total Split (%)	25.8%	25.8%	74.2%	65.0%	65.0%	9%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lag	Lag	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		15.4	94.6		94.6		
Actuated g/C Ratio		0.13	0.79		0.79		
v/c Ratio		0.69	0.72		0.91		
Control Delay		44.6	9.3		15.5		
Queue Delay		0.0	0.1		1.4		
Total Delay		44.6	9.4		16.9		
LOS		D	A		B		
Approach Delay		44.6	9.4		16.9		
Approach LOS		D	A		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 88 (73%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 14.7 Intersection LOS: B
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street

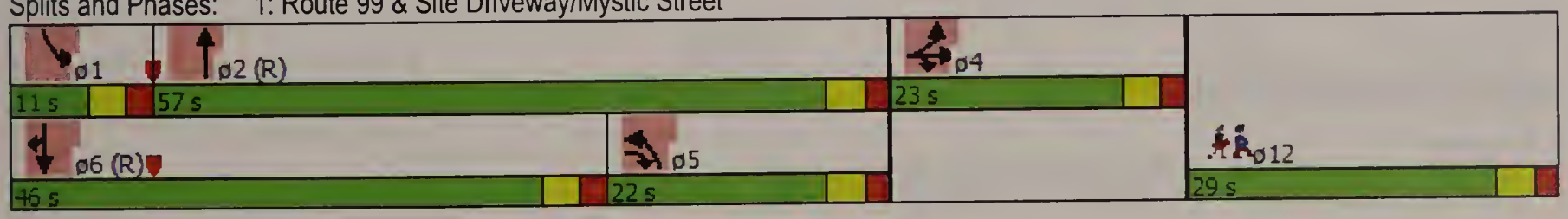


Lane Group	EBL	EBT	EBR	NBL	NBT	SBL	SBT	SBR	ø12
Lane Configurations									
Volume (vph)	110	0	278	245	1549	39	1541	151	
Turn Type	Split	NA	pt+ov	Prot	NA	Prot	NA	Prot	
Protected Phases	4	4	4 5	5	2	1	6	6	12
Permitted Phases									
Detector Phase	4	4	4 5	5	2	1	6	6	
Switch Phase									
Minimum Initial (s)	8.0	8.0		8.0	8.0	6.0	8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		13.0	13.0	11.0	13.0	13.0	29.0
Total Split (s)	23.0	23.0		22.0	57.0	11.0	46.0	46.0	29.0
Total Split (%)	19.2%	19.2%		18.3%	47.5%	9.2%	38.3%	38.3%	24%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag				Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	C-Max	None	C-Max	C-Max	None
Act Effct Green (s)	10.6	10.6	32.6	17.0	85.4	7.8	71.6	71.6	
Actuated g/C Ratio	0.09	0.09	0.27	0.14	0.71	0.06	0.60	0.60	
v/c Ratio	0.41	0.41	0.40	0.57	0.80	0.35	0.76	0.17	
Control Delay	58.9	58.9	37.0	38.2	9.1	52.6	24.3	12.0	
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.0	
Total Delay	58.9	58.9	37.0	38.2	9.5	52.6	24.6	12.0	
LOS	E	E	D	D	A	D	C	B	
Approach Delay		43.2			13.1		24.1		
Approach LOS		D			B		C		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Route 99 & Site Driveway/Mystic Street



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	ø6	ø9
Lane Configurations											
Volume (vph)	36	2	48	277	17	36	1588	66	1351		
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	pm+pt	NA		
Protected Phases		4			4		2	1	1 6	6	9
Permitted Phases	4		4	4		2		1 6			
Detector Phase	4	4	4	4	4	2	2	1	1 6		
Switch Phase											
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0		8.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0	20.0	13.0		13.0	31.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	47.0	47.0	14.0		61.0	31.0
Total Split (%)	23.3%	23.3%	23.3%	23.3%	23.3%	39.2%	39.2%	11.7%		51%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0			
Total Lost Time (s)		5.0	5.0		5.0	5.0	5.0	5.0			
Lead/Lag						Lead	Lead	Lag			
Lead-Lag Optimize?						Yes	Yes	Yes			
Recall Mode	None	None	None	None	None	C-Max	C-Max	None		C-Max	None
Act Effct Green (s)		23.0	23.0		23.0	66.8	66.8	80.8	80.8		
Actuated g/C Ratio		0.19	0.19		0.19	0.56	0.56	0.67	0.67		
v/c Ratio		0.14	0.13		1.39	0.41	0.91	0.39	0.65		
Control Delay		41.8	1.2		235.2	26.1	25.3	26.9	10.6		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		41.8	1.2		235.2	26.1	25.3	26.9	10.6		
LOS		D	A		F	C	C	C	B		
Approach Delay		19.1			235.2		25.4		11.4		
Approach LOS		B			F		C		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 48 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 38.8 Intersection LOS: D
Intersection Capacity Utilization 88.7% ICU Level of Service E
Analysis Period (min) 15

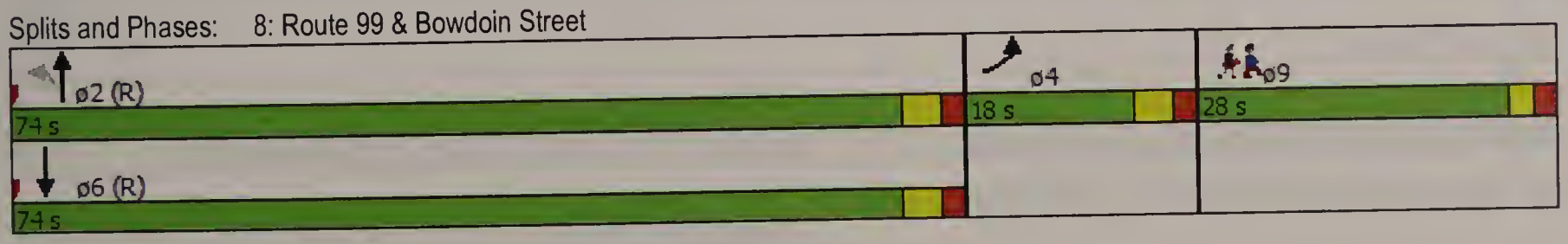
Splits and Phases: 7: Route 99 & Beacham Street

Lane Group	EBL	NBL	NBT	SBT	ø9
Lane Configurations					
Volume (vph)	45	77	1589	1404	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	9
Permitted Phases		2			
Detector Phase	4	2	2	6	
Switch Phase					
Minimum Initial (s)	8.0	8.0	8.0	8.0	4.0
Minimum Split (s)	13.0	13.0	13.0	13.0	28.0
Total Split (s)	18.0	74.0	74.0	74.0	28.0
Total Split (%)	15.0%	61.7%	61.7%	61.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.1	94.3	94.3	94.3	
Actuated g/C Ratio	0.08	0.79	0.79	0.79	
v/c Ratio	0.56	0.44	0.61	0.57	
Control Delay	45.6	14.8	7.2	8.4	
Queue Delay	0.0	0.0	0.1	0.0	
Total Delay	45.6	14.8	7.3	8.4	
LOS	D	B	A	A	
Approach Delay	45.6		7.6	8.4	
Approach LOS	D		A	A	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.1 — Intersection LOS: A
Intersection Capacity Utilization 66.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 8: Route 99 & Bowdoin Street

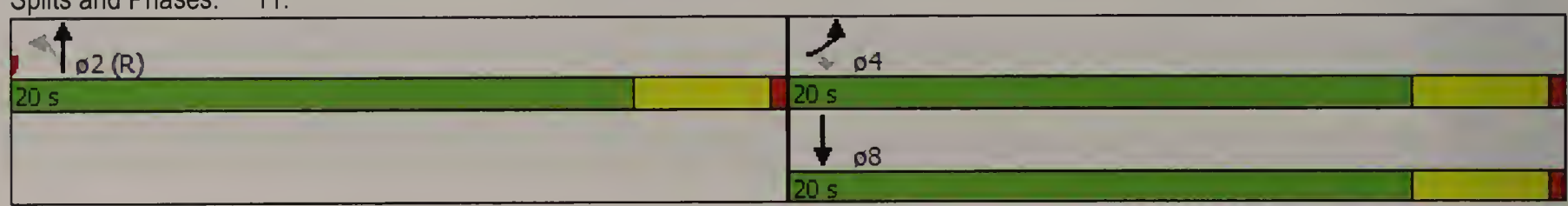


Lane Group	EBL	NBT	SBT
Lane Configurations			
Volume (vph)	194	194	198
Turn Type	Prot	NA	NA
Protected Phases	4!	2	8!
Permitted Phases			
Detector Phase	4	2	8
Switch Phase			
Minimum Initial (s)	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0
Total Split (s)	20.0	20.0	20.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	Max	Max	Max
Act Effct Green (s)	16.0	16.0	16.0
Actuated g/C Ratio	0.40	0.40	0.40
v/c Ratio	0.30	0.15	0.30
Control Delay	9.6	8.0	4.7
Queue Delay	0.0	0.0	0.0
Total Delay	9.6	8.0	4.7
LOS	A	A	A
Approach Delay	9.6	8.0	4.7
Approach LOS	A	A	A

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.30
Intersection Signal Delay: 6.8 Intersection LOS: A
Intersection Capacity Utilization 29.2% ICU Level of Service A
Analysis Period (min) 15
! Phase conflict between lane groups.

Splits and Phases: 11:

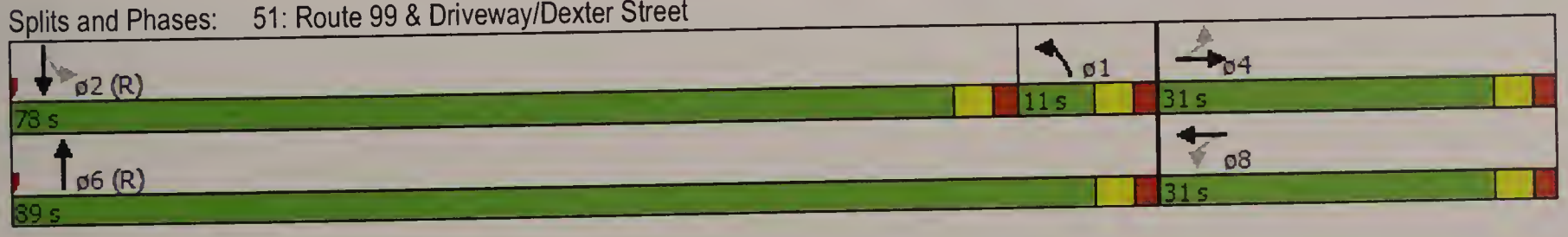


Lane Group	WBL	WBT	NBT	SBL	SBT	ø1	ø4
Lane Configurations							
Volume (vph)	245	0	1991	8	1811		
Turn Type	Perm	NA	NA	Perm	NA		
Protected Phases		8	6		2	1	4
Permitted Phases	8			2			
Detector Phase	8	8	6	2	2		
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	6.0	8.0
Minimum Split (s)	31.0	31.0	25.0	25.0	25.0	11.0	31.0
Total Split (s)	31.0	31.0	89.0	78.0	78.0	11.0	31.0
Total Split (%)	25.8%	25.8%	74.2%	65.0%	65.0%	9%	26%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0		0.0		
Total Lost Time (s)		5.0	5.0		5.0		
Lead/Lag				Lead	Lead	Lag	
Lead-Lag Optimize?				Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)		21.6	88.4		88.4		
Actuated g/C Ratio		0.18	0.74		0.74		
v/c Ratio		0.85	0.87		0.79		
Control Delay		59.3	17.5		13.8		
Queue Delay		0.0	1.1		0.1		
Total Delay		59.3	18.5		13.9		
LOS		E	B		B		
Approach Delay		59.3	18.5		13.9		
Approach LOS		E	B		B		

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:SBTL and 6:NBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 19.2 — Intersection LOS: B
Intersection Capacity Utilization 80.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 51: Route 99 & Driveway/Dexter Street



Assembly Row ATR Counts

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

SB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/11/1														
4	244	18	9	0	0	0	0	0	0	0	0	0	0	271
01:00	181	13	16	0	0	0	0	0	0	0	0	0	0	210
02:00	107	14	9	0	0	0	0	0	0	0	0	0	0	130
03:00	118	16	18	0	0	0	0	0	0	0	0	0	0	152
04:00	276	14	26	0	0	0	0	0	0	0	0	0	0	316
05:00	905	42	42	0	0	0	0	0	0	0	0	0	0	989
06:00	2440	96	18	0	0	0	0	0	0	0	0	0	0	2554
07:00	3003	45	34	0	0	0	0	0	0	0	0	0	0	3082
08:00	2732	76	40	0	0	0	0	0	0	0	0	0	0	2848
09:00	2201	89	45	0	0	0	0	0	0	0	0	0	0	2335
10:00	1735	89	46	0	0	0	0	0	0	0	0	0	0	1870
11:00	1660	77	48	0	0	0	0	0	0	0	0	0	0	1785
12 PM	1790	73	44	0	0	0	0	0	0	0	0	0	0	1907
13:00	1871	86	45	0	0	0	0	0	0	0	0	0	0	2002
14:00	2068	53	16	0	0	0	0	0	0	0	0	0	0	2137
15:00	1987	37	18	0	0	0	0	0	0	0	0	0	0	2042
16:00	1804	21	17	0	0	0	0	0	0	0	0	0	0	1842
17:00	1761	28	12	0	0	0	0	0	0	0	0	0	0	1801
18:00	1616	20	15	0	0	0	0	0	0	0	0	0	0	1651
19:00	1590	15	19	0	0	0	0	0	0	0	0	0	0	1624
20:00	1341	15	12	0	0	0	0	0	0	0	0	0	0	1368
21:00	1211	12	24	0	0	0	0	0	0	0	0	0	0	1247
22:00	1045	10	16	0	0	0	0	0	0	0	0	0	0	1071
23:00	709	11	15	0	0	0	0	0	0	0	0	0	0	735
Total	34395	970	604	0	0	0	0	0	0	0	0	0	0	35969
Percent	95.6%	2.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	06:00	11:00											07:00
Vol.	3003	96	48											3082
PM Peak	14:00	13:00	13:00											14:00
Vol.	2068	86	45											2137

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION
DATA
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
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Email: datarequests@pdillc.com

143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

SB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/12/1														
4	426	12	14	0	0	0	0	0	0	0	0	0	0	452
01:00	318	15	11	0	0	0	0	0	0	0	0	0	0	344
02:00	234	14	14	0	0	0	0	0	0	0	0	0	0	262
03:00	174	12	16	0	0	0	0	0	0	0	0	0	0	202
04:00	168	10	21	0	0	0	0	0	0	0	0	0	0	199
05:00	379	15	29	0	0	0	0	0	0	0	0	0	0	423
06:00	815	25	21	0	0	0	0	0	0	0	0	0	0	861
07:00	1009	37	26	0	0	0	0	0	0	0	0	0	0	1072
08:00	1305	40	23	0	0	0	0	0	0	0	0	0	0	1368
09:00	1599	33	22	0	0	0	0	0	0	0	0	0	0	1654
10:00	1933	27	27	0	0	0	0	0	0	0	0	0	0	1987
11:00	1956	26	27	0	0	0	0	0	0	0	0	0	0	2009
12 PM	2055	25	11	0	0	0	0	0	0	0	0	0	0	2091
13:00	2139	37	8	0	0	0	0	0	0	0	0	0	0	2184
14:00	2128	20	13	0	0	0	0	0	0	0	0	0	0	2161
15:00	2010	11	8	0	0	0	0	0	0	0	0	0	0	2029
16:00	1956	18	13	0	0	0	0	0	0	0	0	0	0	1987
17:00	1889	15	10	0	0	0	0	0	0	0	0	0	0	1914
18:00	1826	18	8	0	0	0	0	0	0	0	0	0	0	1852
19:00	1583	12	6	0	0	0	0	0	0	0	0	0	0	1601
20:00	1402	13	9	0	0	0	0	0	0	0	0	0	0	1424
21:00	1212	7	12	0	0	0	0	0	0	0	0	0	0	1231
22:00	1061	3	10	0	0	0	0	0	0	0	0	0	0	1074
23:00	773	3	5	0	0	0	0	0	0	0	0	0	0	781
Total	30350	448	364	0	0	0	0	0	0	0	0	0	0	31162
Percent	97.4%	1.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	05:00											11:00
Vol.	1956	40	29											2009
PM Peak	13:00	13:00	14:00											13:00
Vol.	2139	37	13											2184

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION DATA INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

SB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/12/1														
4	426	12	14	0	0	0	0	0	0	0	0	0	0	452
01:00	318	15	11	0	0	0	0	0	0	0	0	0	0	344
02:00	234	14	14	0	0	0	0	0	0	0	0	0	0	262
03:00	174	12	16	0	0	0	0	0	0	0	0	0	0	202
04:00	168	10	21	0	0	0	0	0	0	0	0	0	0	199
05:00	379	15	29	0	0	0	0	0	0	0	0	0	0	423
06:00	815	25	21	0	0	0	0	0	0	0	0	0	0	861
07:00	1009	37	26	0	0	0	0	0	0	0	0	0	0	1072
08:00	1305	40	23	0	0	0	0	0	0	0	0	0	0	1368
09:00	1599	33	22	0	0	0	0	0	0	0	0	0	0	1654
10:00	1933	27	27	0	0	0	0	0	0	0	0	0	0	1987
11:00	1956	26	27	0	0	0	0	0	0	0	0	0	0	2009
12 PM	2055	25	11	0	0	0	0	0	0	0	0	0	0	2091
13:00	2139	37	8	0	0	0	0	0	0	0	0	0	0	2184
14:00	2128	20	13	0	0	0	0	0	0	0	0	0	0	2161
15:00	2010	11	8	0	0	0	0	0	0	0	0	0	0	2029
16:00	1956	18	13	0	0	0	0	0	0	0	0	0	0	1987
17:00	1889	15	10	0	0	0	0	0	0	0	0	0	0	1914
18:00	1826	18	8	0	0	0	0	0	0	0	0	0	0	1852
19:00	1583	12	6	0	0	0	0	0	0	0	0	0	0	1601
20:00	1402	13	9	0	0	0	0	0	0	0	0	0	0	1424
21:00	1212	7	12	0	0	0	0	0	0	0	0	0	0	1231
22:00	1061	3	10	0	0	0	0	0	0	0	0	0	0	1074
23:00	773	3	5	0	0	0	0	0	0	0	0	0	0	781
Total	30350	448	364	0	0	0	0	0	0	0	0	0	0	31162
Percent	97.4%	1.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	05:00											11:00
Vol.	1956	40	29											2009
PM Peak	13:00	13:00	14:00											13:00
Vol.	2139	37	13											2184

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION DATA INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

NB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/10/1														
4	516	9	2	0	0	0	0	0	0	0	0	0	0	527
01:00	276	5	2	0	0	0	0	0	0	0	0	0	0	283
02:00	246	12	6	0	0	0	0	0	0	0	0	0	0	264
03:00	127	7	10	0	0	0	0	0	0	0	0	0	0	144
04:00	177	9	24	0	0	0	0	0	0	0	0	0	0	210
05:00	428	27	26	0	0	0	0	0	0	0	0	0	0	481
06:00	689	31	20	0	0	0	0	0	0	0	0	0	0	740
07:00	1150	45	18	0	0	0	0	0	0	0	0	0	0	1213
08:00	1348	64	21	0	0	0	0	0	0	0	0	0	0	1433
09:00	1187	76	38	0	0	0	0	0	0	0	0	0	0	1301
10:00	1157	86	28	0	0	0	0	0	0	0	0	0	0	1271
11:00	1274	57	19	0	0	0	0	0	0	0	0	0	0	1350
12 PM	1384	66	21	0	0	0	0	0	0	0	0	0	0	1471
13:00	1375	73	16	0	0	0	0	0	0	0	0	0	0	1464
14:00	1608	48	18	0	0	0	0	0	0	0	0	0	0	1674
15:00	2029	51	3	0	0	0	0	0	0	0	0	0	0	2083
16:00	2248	45	7	0	0	0	0	0	0	0	0	0	0	2300
17:00	2283	22	4	0	0	0	0	0	0	0	0	0	0	2309
18:00	1973	29	7	0	0	0	0	0	0	0	0	0	0	2009
19:00	1580	18	9	0	0	0	0	0	0	0	0	0	0	1607
20:00	1257	18	3	0	0	0	0	0	0	0	0	0	0	1278
21:00	1089	13	5	0	0	0	0	0	0	0	0	0	0	1107
22:00	875	15	1	0	0	0	0	0	0	0	0	0	0	891
23:00	642	6	3	0	0	0	0	0	0	0	0	0	0	651
Total	26918	832	311	0	0	0	0	0	0	0	0	0	0	28061
Percent	95.9%	3.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	10:00	09:00											08:00
Vol.	1348	86	38											1433
PM Peak	17:00	13:00	12:00											17:00
Vol.	2283	73	21											2309

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

NB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/11/1														
4	393	5	4	0	0	0	0	0	0	0	0	0	0	402
01:00	219	6	7	0	0	0	0	0	0	0	0	0	0	232
02:00	180	10	4	0	0	0	0	0	0	0	0	0	0	194
03:00	99	5	16	0	0	0	0	0	0	0	0	0	0	120
04:00	142	4	25	0	0	0	0	0	0	0	0	0	0	171
05:00	396	22	26	0	0	0	0	0	0	0	0	0	0	444
06:00	738	32	22	0	0	0	0	0	0	0	0	0	0	792
07:00	1113	57	26	0	0	0	0	0	0	0	0	0	0	1196
08:00	1326	66	17	0	0	0	0	0	0	0	0	0	0	1409
09:00	1149	89	35	0	0	0	0	0	0	0	0	0	0	1273
10:00	1238	86	16	0	0	0	0	0	0	0	0	0	0	1340
11:00	1307	79	25	0	0	0	0	0	0	0	0	0	0	1411
12 PM	1380	70	18	0	0	0	0	0	0	0	0	0	0	1468
13:00	1549	67	16	0	0	0	0	0	0	0	0	0	0	1632
14:00	1636	57	12	0	0	0	0	0	0	0	0	0	0	1705
15:00	2078	58	9	0	0	0	0	0	0	0	0	0	0	2145
16:00	2269	37	10	0	0	0	0	0	0	0	0	0	0	2316
17:00	2233	26	3	0	0	0	0	0	0	0	0	0	0	2262
18:00	1880	23	9	0	0	0	0	0	0	0	0	0	0	1912
19:00	1586	22	4	0	0	0	0	0	0	0	0	0	0	1612
20:00	1194	9	4	0	0	0	0	0	0	0	0	0	0	1207
21:00	1081	7	2	0	0	0	0	0	0	0	0	0	0	1090
22:00	964	11	2	0	0	0	0	0	0	0	0	0	0	977
23:00	842	10	1	0	0	0	0	0	0	0	0	0	0	853
Total	26992	858	313	0	0	0	0	0	0	0	0	0	0	28163
Percent	95.8%	3.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	09:00	09:00											11:00
Vol.	1326	89	35											1411
PM Peak	16:00	12:00	12:00											16:00
Vol.	2269	70	18											2316

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

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143817 A CLASS
Site Code: 8518.04
Date Start: 10-Apr-14

NB

Start Time	Cars	Medium Heavy	Large Heavy	Total										
04/12/1														
4	448	8	1	0	0	0	0	0	0	0	0	0	0	457
01:00	372	4	1	0	0	0	0	0	0	0	0	0	0	377
02:00	396	17	3	0	0	0	0	0	0	0	0	0	0	416
03:00	196	9	6	0	0	0	0	0	0	0	0	0	0	211
04:00	87	4	4	0	0	0	0	0	0	0	0	0	0	95
05:00	157	7	15	0	0	0	0	0	0	0	0	0	0	179
06:00	277	26	9	0	0	0	0	0	0	0	0	0	0	312
07:00	537	29	7	0	0	0	0	0	0	0	0	0	0	573
08:00	811	22	9	0	0	0	0	0	0	0	0	0	0	842
09:00	1180	28	11	0	0	0	0	0	0	0	0	0	0	1219
10:00	1429	32	7	0	0	0	0	0	0	0	0	0	0	1468
11:00	1539	38	9	0	0	0	0	0	0	0	0	0	0	1586
12 PM	1773	28	4	0	0	0	0	0	0	0	0	0	0	1805
13:00	1805	28	5	0	0	0	0	0	0	0	0	0	0	1838
14:00	1857	18	1	0	0	0	0	0	0	0	0	0	0	1876
15:00	1773	14	7	0	0	0	0	0	0	0	0	0	0	1794
16:00	1717	15	0	0	0	0	0	0	0	0	0	0	0	1732
17:00	1680	13	1	0	0	0	0	0	0	0	0	0	0	1694
18:00	1471	4	2	0	0	0	0	0	0	0	0	0	0	1477
19:00	1381	5	4	0	0	0	0	0	0	0	0	0	0	1390
20:00	1240	7	1	0	0	0	0	0	0	0	0	0	0	1248
21:00	1015	3	1	0	0	0	0	0	0	0	0	0	0	1019
22:00	984	3	1	0	0	0	0	0	0	0	0	0	0	988
23:00	842	2	2	0	0	0	0	0	0	0	0	0	0	846
Total	24967	364	111	0	0	0	0	0	0	0	0	0	0	25442
Percent	98.1%	1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	05:00											11:00
Vol.	1539	38	15											1586
PM Peak	14:00	12:00	15:00											14:00
Vol.	1857	28	7											1876

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION
DATA
INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 A Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start	SB				NB				Combined				10-Apr-14
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Thu
12:00	76		425		192		395		268		820		
12:15	80		443		129		361		209		804		
12:30	66		461		97		349		163		810		
12:45	51	273	410	1739	109	527	366	1471	160	800	776	3210	
01:00	44		479		87		334		131		813		
01:15	37		440		78		365		115		805		
01:30	34		510		56		397		90		907		
01:45	35	150	466	1895	62	283	368	1464	97	433	834	3359	
02:00	29		513		78		398		107		911		
02:15	32		521		74		413		106		934		
02:30	38		551		62		421		100		972		
02:45	32	131	476	2061	50	264	442	1674	82	395	918	3735	
03:00	32		505		32		503		64		1008		
03:15	36		489		35		539		71		1028		
03:30	45		496		44		527		89		1023		
03:45	47	160	455	1945	33	144	514	2083	80	304	969	4028	
04:00	56		440		44		507		100		947		
04:15	62		465		46		575		108		1040		
04:30	76		457		43		622		119		1079		
04:45	98	292	430	1792	77	210	596	2300	175	502	1026	4092	
05:00	133		488		79		497		212		985		
05:15	182		455		104		652		286		1107		
05:30	312		441		135		585		447		1026		
05:45	407	1034	370	1754	163	481	575	2309	570	1515	945	4063	
06:00	496		418		151		565		647		983		
06:15	639		381		183		554		822		935		
06:30	744		427		194		442		938		869		
06:45	858	2737	413	1639	212	740	448	2009	1070	3477	861	3648	
07:00	771		388		231		412		1002		800		
07:15	855		406		335		415		1190		821		
07:30	738		423		313		386		1051		809		
07:45	794	3158	344	1561	334	1213	394	1607	1128	4371	738	3168	
08:00	718		394		348		360		1066		754		
08:15	763		304		391		329		1154		633		
08:30	793		358		337		317		1130		675		
08:45	686	2960	306	1362	357	1433	272	1278	1043	4393	578	2640	
09:00	554		286		333		281		887		567		
09:15	599		277		337		307		936		584		
09:30	507		242		321		261		828		503		
09:45	478	2138	229	1034	310	1301	258	1107	788	3439	487	2141	
10:00	465		219		306		256		771		475		
10:15	464		230		334		223		798		453		
10:30	438		170		319		229		757		399		
10:45	458	1825	193	812	312	1271	183	891	770	3096	376	1703	
11:00	416		147		292		186		708		333		
11:15	447		142		366		149		813		291		
11:30	484		117		337		172		821		289		
11:45	388	1735	97	503	355	1350	144	651	743	3085	241	1154	
Total	16593		18097		9217		18844		25810		36941		
Percent	64.3%		49.0%		35.7%		51.0%						
Day Total		34690				28061				62751			
Peak	06:30	-	02:00	-	08:00	-	05:15	-	07:45	-	04:30	-	- -
Vol.	3228	-	2061	-	1433	-	2377	-	4478	-	4197	-	- -
P.H.F.	0.941		0.935		0.916		0.911		0.970		0.948		

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

PRECISION
D A T A
INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
Email datarequests@pdillc.com

143817 A Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start	SB				NB				Combined				11-Apr-14
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		Fri
12:00	84		463		111		347		195		810		
12:15	67		480		121		368		188		848		
12:30	57		488		100		403		157		891		
12:45	63	271	476	1907	70	402	350	1468	133	673	826	3375	
01:00	58		502		60		389		118		891		
01:15	43		492		61		391		104		883		
01:30	60		518		56		415		116		933		
01:45	49	210	490	2002	55	232	437	1632	104	442	927	3634	
02:00	30		493		49		396		79		889		
02:15	31		574		61		427		92		1001		
02:30	36		555		49		387		85		942		
02:45	33	130	515	2137	35	194	495	1705	68	324	1010	3842	
03:00	35		550		33		459		68		1009		
03:15	34		486		30		543		64		1029		
03:30	37		497		27		530		64		1027		
03:45	46	152	509	2042	30	120	613	2145	76	272	1122	4187	
04:00	42		445		32		601		74		1046		
04:15	78		456		37		577		115		1033		
04:30	92		515		47		551		139		1066		
04:45	104	316	426	1842	55	171	587	2316	159	487	1013	4158	
05:00	130		443		79		548		209		991		
05:15	186		491		87		541		273		1032		
05:30	320		458		126		611		446		1069		
05:45	353	989	409	1801	152	444	562	2262	505	1433	971	4063	
06:00	448		422		144		498		592		920		
06:15	646		424		155		530		801		954		
06:30	747		397		221		451		968		848		
06:45	713	2554	408	1651	272	792	433	1912	985	3346	841	3563	
07:00	765		445		277		419		1042		864		
07:15	806		370		309		404		1115		774		
07:30	800		451		274		402		1074		853		
07:45	711	3082	358	1624	336	1196	387	1612	1047	4278	745	3236	
08:00	724		351		340		357		1064		708		
08:15	736		326		308		286		1044		612		
08:30	709		366		380		286		1089		652		
08:45	679	2848	325	1368	381	1409	278	1207	1060	4257	603	2575	
09:00	579		328		307		309		886		637		
09:15	630		324		316		256		946		580		
09:30	595		319		321		282		916		601		
09:45	531	2335	276	1247	329	1273	243	1090	860	3608	519	2337	
10:00	500		294		299		276		799		570		
10:15	462		266		338		232		800		498		
10:30	475		271		320		248		795		519		
10:45	433	1870	240	1071	383	1340	221	977	816	3210	461	2048	
11:00	424		221		336		243		760		464		
11:15	447		209		357		247		804		456		
11:30	475		182		366		206		841		388		
11:45	439	1785	123	735	352	1411	157	853	791	3196	280	1588	
Total	16542		19427		8984		19179		25526		38606		
Percent	64.8%		50.3%		35.2%		49.7%						
Day Total		35969				28163				64132			
Peak	06:45	-	02:15	-	10:45	-	03:45	-	07:15	-	03:45	-	- -
Vol.	3084	-	2194	-	1442	-	2342	-	4300	-	4267	-	- -
P.H.F.	0.957		0.956		0.941		0.955		0.964		0.951		

Fellsway (Route 28)
south of Middlesex Avenue
City, State: Somerville, MA
Client: VHB/ C. Keches

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143817 A Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start	SB				NB				Combined				12-Apr-14 Sat
Time	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.		
12:00	107		577		147		454		254		1031		
12:15	108		501		93		412		201		913		
12:30	118		509		109		475		227		984		
12:45	119	452	504	2091	108	457	464	1805	227	909	968	3896	
01:00	97		557		90		461		187		1018		
01:15	95		531		104		469		199		1000		
01:30	68		562		100		451		168		1013		
01:45	84	344	534	2184	83	377	457	1838	167	721	991	4022	
02:00	75		538		115		479		190		1017		
02:15	71		524		123		496		194		1020		
02:30	61		561		103		431		164		992		
02:45	55	262	538	2161	75	416	470	1876	130	678	1008	4037	
03:00	44		533		62		437		106		970		
03:15	53		483		55		459		108		942		
03:30	46		515		57		461		103		976		
03:45	59	202	498	2029	37	211	437	1794	96	413	935	3823	
04:00	42		506		17		423		59		929		
04:15	42		503		19		460		61		963		
04:30	56		492		30		422		86		914		
04:45	59	199	486	1987	29	95	427	1732	88	294	913	3719	
05:00	64		483		32		410		96		893		
05:15	95		488		36		475		131		963		
05:30	140		484		46		428		186		912		
05:45	124	423	459	1914	65	179	381	1694	189	602	840	3608	
06:00	167		516		52		385		219		901		
06:15	203		471		62		381		265		852		
06:30	258		450		81		363		339		813		
06:45	233	861	415	1852	117	312	348	1477	350	1173	763	3329	
07:00	216		455		119		337		335		792		
07:15	267		424		131		347		398		771		
07:30	285		371		172		365		457		736		
07:45	304	1072	351	1601	151	573	341	1390	455	1645	692	2991	
08:00	305		383		195		325		500		708		
08:15	330		345		175		307		505		652		
08:30	396		355		211		315		607		670		
08:45	337	1368	341	1424	261	842	301	1248	598	2210	642	2672	
09:00	368		338		282		258		650		596		
09:15	386		298		295		272		681		570		
09:30	476		292		296		251		772		543		
09:45	424	1654	303	1231	346	1219	238	1019	770	2873	541	2250	
10:00	476		279		364		220		840		499		
10:15	448		247		361		247		809		494		
10:30	565		268		362		265		927		533		
10:45	498	1987	280	1074	381	1468	256	988	879	3455	536	2062	
11:00	508		222		398		244		906		466		
11:15	468		211		366		248		834		459		
11:30	510		176		399		184		909		360		
11:45	523	2009	172	781	423	1586	170	846	946	3595	342	1627	
Total	10833		20329		7735		17707		18568		38036		
Percent	58.3%		53.4%		41.7%		46.6%						
Day Total		31162				25442				56604			
Peak	10:30	-	01:00	-	11:00	-	01:30	-	11:00	-	01:30	-	- -
Vol.	2039	-	2184	-	1588	-	1883	-	3595	-	4041	-	- -
P.H.F.	0.902		0.972		0.937		0.949		0.950		0.990		

Mystic Avenue
north of N. Union Street
City, State: Somerville, MA
Client: VHB/ K. keches

PRECISION
D A T A
INDUSTRIES, LLC
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143817 B Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start Time	A.M.	NB	P.M.											Thu 10-Apr-14
12:00	54		254											
12:15	40		284											
12:30	45		294											
12:45	26	165	294	1126										
01:00	17		302											
01:15	28		283											
01:30	19		300											
01:45	28	92	333	1218										
02:00	32		396											
02:15	7		421											
02:30	26		402											
02:45	13	78	400	1619										
03:00	20		396											
03:15	16		390											
03:30	12		440											
03:45	10	58	399	1625										
04:00	16		422											
04:15	31		390											
04:30	32		421											
04:45	47	126	379	1612										
05:00	58		390											
05:15	84		423											
05:30	118		466											
05:45	140	400	395	1674										
06:00	128		388											
06:15	156		324											
06:30	194		312											
06:45	186	664	265	1289										
07:00	181		274											
07:15	200		250											
07:30	290		217											
07:45	235	906	208	949										
08:00	235		180											
08:15	258		201											
08:30	246		160											
08.45	220	959	181	722										
09:00	199		133											
09:15	220		151											
09:30	220		116											
09:45	236	875	119	519										
10:00	232		115											
10:15	232		122											
10:30	241		122											
10:45	287	992	83	442										
11:00	246		89											
11:15	259		94											
11:30	284		88											
11:45	267	1056	52	323										
Total	6371		13118											
Percent			100.0 %		0.0%		0.0%							
Day Total		19489												
Peak	10:45	-	05:00	-	-	-	-	-	-	-	-	-	-	-
Vol.	1076	-	1674	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.937		0.898											

Mystic Avenue
north of N. Union Street
City, State: Somerville, MA
Client: VHB/ K. keches

PRECISION DATA INDUSTRIES, LLC
P.O.Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

143817 B Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start Time	A.M.	N8	P.M.											Fri 11-Apr-14
12:00	54		296											
12:15	37		328											
12:30	33		285											
12:45	28	152	260	1169										
01:00	30		311											
01:15	26		321											
01:30	22		319											
01:45	20	98	345	1296										
02:00	19		346											
02:15	11		423											
02:30	23		438											
02:45	25	78	440	1647										
03:00	18		432											
03:15	25		454											
03:30	20		426											
03:45	27	90	398	1710										
04:00	18		432											
04:15	14		410											
04:30	40		406											
04:45	38	110	393	1641										
05:00	78		454											
05:15	84		374											
05:30	110		422											
05:45	124	396	341	1591										
06:00	134		331											
06:15	152		321											
06:30	168		301											
06:45	194	648	268	1221										
07:00	210		295											
07:15	224		250											
07:30	232		224											
07:45	224	890	184	953										
08:00	242		195											
08:15	242		152											
08:30	224		150											
08:45	215	923	140	637										
09:00	234		121											
09:15	228		125											
09:30	208		157											
09:45	230	900	146	549										
10:00	230		151											
10:15	232		226											
10:30	242		137											
10:45	276	980	112	626										
11:00	276		104											
11:15	272		110											
11:30	293		98											
11:45	278	1119	82	394										
Total	6384		13434											
Percent			100.0 %		0.0%		0.0%							
Day Total		19818												
Peak	11:00	-	02:30	-	-	-	-	-	-	-	-	-	-	-
Vol.	1119	-	1764	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.955		0.971											

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143817 B Volume
Site Code: 8518.04
Date Start: 10-Apr-14

Start Time	A.M.	NB	P.M.		Sat 12-Apr-14
12:00	134		328		
12:15	144		322		
12:30	132		312		
12:45	125	535	296	1258	
01:00	115		305		
01:15	101		285		
01:30	94		280		
01:45	79	389	291	1161	
02:00	112		283		
02:15	92		288		
02:30	82		281		
02:45	46	332	296	1148	
03:00	38		302		
03:15	50		340		
03:30	28		390		
03:45	31	147	406	1438	
04:00	20		352		
04:15	29		286		
04:30	34		297		
04:45	52	135	288	1223	
05:00	52		318		
05:15	44		306		
05:30	38		240		
05:45	58	192	239	1103	
06:00	58		236		
06:15	77		230		
06:30	95		218		
06:45	86	316	200	884	
07:00	114		169		
07:15	144		164		
07:30	146		175		
07:45	156	560	128	636	
08:00	182		140		
08:15	204		148		
08:30	195		181		
08:45	198	779	122	591	
09:00	218		134		
09:15	234		127		
09:30	270		124		
09:45	231	953	103	488	
10:00	240		105		
10:15	282		92		
10:30	270		116		
10:45	304	1096	118	431	
11:00	298		114		
11:15	292		101		
11:30	326		94		
11:45	304	1220	78	387	
Total	6654		10748		
Percent			100.0 %	0.0%	0.0%
Day Total		17402			
Peak	10:45	-	03:15	-	- - - - - - - - - -
Vol.	1220	-	1488	-	- - - - - - - - - -
P.H.F.	0.936		0.916		

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